ECOLOGICAL MODERNISATION AND ORGANIC FARMING

A COMPARATIVE ASSESSMENT BETWEEN UK AND THE STATE OF KARNATAKA (INDIA)

By

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ABSTRACT

Organic farming is an environmentally friendly farming that has become a flourishing business. It uses eco-friendly technologies to cater to the needs of the affluent society's world over. The use of modern technology is combined with environmental bureaucratic standards in a capitalist market to provide high quality of life to the environmentally conscious individual. In this study, the different approaches to organic farming in the UK and India (Karnataka) have been discussed.

Bureaucratic certification has a crucial role in demarcating the distinction between modern and traditional organic farming. In a capitalist society, the bureaucratic commodification of organic products has made them distinct in an era of Ecological Modernisation.

Ecological Modernisation is an approach that believes in combining environment friendly technology and bureaucracy in terms of stringent environmental standards to meet the requirements of the affluent public.

In India and UK 'Organic' is a product that needs to be certified in order for it to prove its ecological bearings so that it can be traded. The bureaucracy by itself accounts for a very small value of the total amount that is spent on organic foods, yet it plays a pivotal role.

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CONTENTS

Chapter 1	**Review of Literature**	1
	Introduction	1
	1.1 Modernity and Tradition	6
	1.2 Organic agriculture as a natural system and holistic system	16
	1.3 Sustainability	18
	1.4 Organic farming rules, regulations and policies	20
	1.5 Ecological Modernisation	20
	1.6 Conclusion	20
Chapter 2	**Ecological Modernisation**	21
	2.1 Technology approach	27
	2.2 Policy approach	27
	2.3 Social approach	29
	2.4 Economic approach	30
	2.5 Supports for Ecological Modernisation	31
	2.6 Criticisms of Ecological Modernisation	33
	2.7 Ecological Modernisation versus Sustainable Development	36
	2.8 The use of EM in the thesis	38
	2.8.1 Combination of environment and economic development	43
	2.8.2 Incorporation of this concept in commercial, mainstream organic farming practices	43
	2.9 Sociology of organic farming	44
	2.10 Conclusion	48
Chapter 3	**Organic Farming in the UK**	50

3.1 Ecological Modernisation and organic farming 50

3.2 EU legislation on organic agriculture 52

3.3 UK legislation on organic agriculture 59

3.4 UK organic certifying bodies 61

3.4.1 Soil Association 62

3.3.2 Organic Farmers and Growers Ltd 65

3.3.3 Scottish Organic Producers Association 66

3.3.4 Organic Food Federation 68

3.3.5 Organic Trust Ltd 69

3.3.6 CMi UK 70

3.4 Conclusion 73

Chapter 4 Organic Farming in India (State of Karnataka) 76

4.1 Green Revolution 78

4.2 Effects of Green revolution on different sectors 83

4.3 Organics and Ecological alternatives 86

4.4 National Agricultural Policy 91

4.5 Government attitudes towards organic farming 99

4.6 Organic certification bodies 103

4.6.1 SGS India Pvt. Ltd. 105

4.6.2 ECOCERT (Eco control and certification body) 106

4.6.3 Indian Organic Certification Agency (INDOCERT) 108

4.6.4 LACON Ltd. 110

(Institute for food quality and certification of organic food)

4.6.5 Lacon Quality Certification (India) Pvt. Ltd. 110

4.6.6 Natural Organic Certification Association (NOCA) 111

4.6.7 One Cert Asia Agri Certification Pvt. Ltd 113

4.6.8 Institute for Marketecology Control Private Limited 115

4.6.9 The Association Promotion of Organic Farming (APOF) 116

4.7 Other Organic Certification Bodies 119

4.8 Standards set by the certification bodies 119

4.9 Research and support organizations for organic food and farming 123

4.10 Conclusion 127

Chapter 5 Conclusion 131

Bibliography 136

CHAPTER 1

REVIEW OF LITERATURE

Introduction

The main aim of this research thesis is to try to reflect on the role that Ecological Modernisation plays with relevance to organic farming in two countries, i.e. India (Karnataka) and UK. Further, a comparative account of organic farming policies in India (Karnataka) and UK has been attempted in the thesis to see if Ecological Modernisation can be reflected in the organic farming practices and policies in both countries. In addition, to this the focus is on distinguishing and highlighting the practices that entail organic farming in UK and Karnataka. The topics that are covered in the thesis include Organic farming in the context of India, (Karnataka) and UK, Ecological Modernisation and it's significance with respect to organic farming in the two countries, EU legislation and UK legislation on organic farming as well as the Indian National agricultural policy and Karnataka state organic farming policy.

The research objectives of the thesis are as follows:

1) To compare and contrast organic farming in India and UK
2) To study the rules and regulations on organic farming in the UK and India (Karnataka) and find out if the definition of organic farming has undergone changes over the years in both countries
3) To find out if Ecological Modernisation is reflected in organic farming practices in India (Karnataka) and UK. The first two objectives make it possible to answer the third objective.

The previous analysts of agriculture sociology have argued that there is a new emerging tradition of rural sociology including such topics as the environment of agriculture. (Buttel et.al, 1990). This study is a contribution to this new tradition.

The thesis has been structured as follows:

First is the literature review of organic farming, which has been discussed under five different streams namely - Modernity and Tradition, organic agriculture as a natural system and holistic system, sustainability, organic farming rules and regulations and policies. After the review of literature chapter, the second chapter introduces the concept of Ecological Modernisation (EM). Under this Ecological Modernisation has been discussed in detail. The various perceptions on EM by different authors have been stated and discussed. In addition, criticisms on EM have been presented in the chapter. The theme of bureaucratisation as an important defining Ecological Modernisation (EM) feature of modern organic practices is discussed here, as are other EM themes such as the conversion of the organic industry to commercial marketing and trade, increasing control by conventional food industry companies and utilization of modern scientific methods.

Moving on to the third chapter of the thesis, it discusses organic farming in the UK and about the definitions as well as the perspectives towards organic farming which has undergone changes over the years. Ecological Modernisation is explored in the context of organic farming practices in the UK.

The fourth chapter discusses about organic farming in India again highlighting on Ecological Modernisation in the context of organic farming. In the same chapter aspects like

the ‘Green revolution’, official rules and regulations on organic farming in Karnataka and organization as well as certification of organic farming have been discussed under the following heads:

- ✓ Green revolution
- ✓ Organics and ecological alternatives
- ✓ Organization and certification of organic farming in Karnataka

Finally, the last chapter is a conclusion, which answers the research questions posed earlier.

Method

The methodology that has been used for this study involved analyzing texts that covered EU rules and regulations from 1994 onwards, texts that covered Karnataka state policy from 2004 onwards and texts from organizations that are responsible for certifying organic farming in the two countries. Newspaper articles have been used as a source of information. Apart from which personal communication methods (e-mail in this particular case) and telephonic interviews have been used for gathering information from organic certifying bodies. The official government documents on organic farming for both countries helped in studying the rules and regulations on organic farming. In addition, it provided an insight into how the definition of organic farming had undergone a transition over a period. This in turn was useful in identifying if Ecological Modernisation was reflected in the organic farming sector in UK and India (Karnataka).

Further, telephonic interviews and emails helped in getting different perspectives on organic farming in both countries.

To begin with, organic farming is said to be a more sustainable alternative to conventional agriculture, because of the environment friendly methods that it adopts in growing food by using on farm inputs rather than external outputs like fertilizers and pesticides. This has given it sufficient significance.

A comparative account of organic farming in two countries like India (Karnataka) and UK has been attempted, in order to bring to light many variations in terms of social, cultural and economic perspectives. This also holds true with respect to the history of organic farming and its association in these two countries. In this context, a framework is needed to facilitate the understanding of what organic farming is and what it entails in both countries. How can we analyse the apparent transition of a 'traditional' form of farming into one that is marketed in the modern world today as an eco friendly commodity? Ecological Modernisation is used as a framework to achieve this. An understanding of Ecological Modernisation is necessary in order to be able to understand its role in organic farming.

Karnataka, a southern state in India has been chosen for the study. The reason for this is that organic farming is increasingly gaining popularity in this state. The Government of Karnataka is playing a very important role in helping to promote and popularize organic farming within the country. In fact, Karnataka was the "first state to bring out an organic farming policy of its own in 2004. The Organic Agriculture Movement existed in the state since decades". (Department of Agriculture, Government of Karnataka, n.d, p.3).In this sense, it would be more relevant in the context of organic farming policy systems to focus on the state of Karnataka. To illustrate the involvement of Karnataka in playing a pivotal role in helping protect the environment through organic agriculture the following two examples can be cited:

The extent of interest in organic farming is so much in the state that the Government of Karnataka in its policy framework for organic farming has envisaged a “model organic village/site”, in which “one village in each district comprising 200-500 acres would be converted to organic village in a phased manner”. (Department of Agriculture, Government of Karnataka, n.d, p.7). The intention is to motivate producers to practice organic farming. Apart from the government initiative in Karnataka there are also a number of self-help farmer groups who are dedicated in promoting organic farming like Sahaja Samrudha.

This is a group consisting of “pioneer farmers” who help in motivating other farmers to grow food, which is of good quality, and work in coexistence with “nature’s protective network of soil micro-organisms and beneficial insects. This would help them farm successfully” (http://www.sahajasamrudha.org/index.htm, n.d). This organization has apart from being inspirational to other farmer’s also publicized achievements of other farmers in the state who have practiced organic farming. Thus, this goes to show that organic farming is increasingly motivating farmers more and more in the state (http://www.sahajasamrudha.org/index.htm, n.d).

This is reflective of the fact that in Karnataka producers seem to have good knowledge about the techniques involved in the organic farming practices and are motivated in helping out as well as passing on their knowledge to other producers. In addition to the producers, the government also has taken initiatives in helping boost organic farming practices. The prospects of increased trade with more affluent people in both Indian cities and export to industrialized countries are a possible explanation for the government’s interest in such initiatives.

Moving on to the review of literature, it brings out a significant contrast to the various approaches to organic farming and also the way it has been defined and perceived in both countries. These approaches cover aspects like tradition, modernity, sustainability, and philosophy of life and the holistic nature of an ecosystem. These aspects will be explored in detail in the following review of the literature. The literature that has been reviewed gives an overall picture of the distinctions in definitions of organic farming in UK and India (Karnataka) and the theory of "Ecological Modernisation". This chapter begins with literature review that has been divided into five different streams. This is because it seems to be a useful way of categorizing the review of literature.

- ✓ Modernity and Tradition
- ✓ Organic agriculture as a natural system and holistic system::
- ✓ Sustainability
- ✓ Organic farming rules, regulations and policies
- ✓ Ecological Modernisation

1.1 Modernity and Tradition

Organic farming in the UK is associated with the adoption of modern techniques. Modernity is often anchored with science, enlightenment and stress on using technology and the latest scientific methods. The development of modern agriculture can be related to adopting scientific methods to improve productivity. One big question that arises in this context is that how far is organic farming in India still bound by tradition? Has organic farming in India (Karnataka) today taken on a more modern approach? The thesis tries to seek answers to these questions. These questions can be linked to the first research objective of the thesis as well as the second research objective. With regard to tradition, in India the example of the

"cow" can be taken. Organic farming uses inputs derived from cows on the farm in the form of farmyard manure. The cow is considered as holy in India and has been worshipped for a long time to come. This can be associated with a tradition, that has been retained in the Indian culture for centuries to come and hence, tradition can be looked at as a practice or belief that has it's roots in a culture and in society. It can be therefore, perceived that tradition and modern approaches to organic farming are very different.

Next in the context of UK organic farming is discussed which is an important part of the thesis. Organic farming has been regarded as both a modern and traditional approach to farming in different contexts and can be explained as follows:

Lampkin (1990) talks about Organic farming as having the same leys or mixed farming base that it had before World War II while many of its techniques and practices are modern developments. This approach to organic farming is more in keeping with a modern outlook. (Lampkin, 1990, p.3). Modernity in terms of organic farming practices highlights the use of technology. Lampkin further says that:

> **A mistaken idea about organic agriculture is that it is a return to farming as it was pre-1939. There is still a shared focus on what has been described as 'good sound husbandry', involving balanced rotations, mixed farms and mechanical methods, of weed control. However, modern organic farming seeks to develop upon increased understanding of such things as mycorrhizal associations, rhizobia and the rhizosphere, the turnover of organic matter and other areas of soil life, crop and animal husbandry that modern science has revealed. Organic farmers cannot be**

Luddites, setting aside the developments of the last 50 years. (Lampkin, 1990, p.3).

Now here are two different points of views on what organic agriculture is about that are representative of two different countries one being India and the other the UK. for the first perspective let us look at what authors describe as organic farming in the west, the second which would be discussed , is the perspective in India. In the UK, it seems to be associated with a more modern system of agriculture, especially with regard to the methods and practices adopted as per Lampkin's definition of it. This is in contrast to Organic farming being visualized as a part of the Indian tradition and culture. It was very much a part of the Indian society for centuries. In fact, organic agriculture could be linked to going back to one's roots. These two different views on organic agriculture, may have a close association to the culture and tradition in each country, where on one hand modernity is associated with organic farming on the other hand the revival of something that is already a part of a country's heritage (India) is what it is looked as upon.

Alteiri is of the opinion that:

Organic agriculture does not involve only traditional methods of practice rather; it combines traditional methods and latest methods of farming practices. (Alteiri, 1998, p.179).

Alteiri here seems to be of a slightly different opinion from Lampkin in that scientific methods and modern technology along with traditional methods is what organic agriculture practices entail.

Browning (2005) argues that organic farming does not relate to going back in times and it has nothing to do with being “anti-technology”. Technology is of importance to an extent in organic farming. It makes the system of farming stronger. (Browning, 2008, p.1). Here the approach to organic farming is from a more modern perspective.

Suzuki’s perception of organic farming is that it is:

> **A method of farming that is not about going back in time but rather moving on or moving forward. It is a smart kind of farming that helps maintain healthy ecosystems. (Suzuki, 2002, p.1).**

Terry and Langner (2005) say that organic farming requires very little inputs and cuts down the use of external inputs, in other words it can also be termed as “low- input farming” and “from the producers perspective it is economically sound and viable.” (Terry & Langner, 2005). They term it as a “sophisticated alternative agricultural system”.

Browning(2005), Suzuki(2002), Terry and Langner (2005) too perceive organic farming as being modern, rather than something traditional, about moving ahead with technology where the organic farming practices are concerned. In all the definitions that have been mentioned, technology and modernity are two core words that have been highlighted on, which is (as will be discussed in Chapter 2) where the theory of EM is relevant to this case study.

The Organic Farmers and Growers Limited, which is a leading organic certifying body in the UK defines organic farming as:

> **A modern sustainable farming system, which maintains the long-term fertility of the soil and uses less of the Earth's finite resources to produce**

high quality, nutritious food. (http://www.organicfarmers.org.uk /aboutorganics/organic_farming.php, 2008).

Here, it can be noticed that the definition of organic farming entails both modernity and sustainability. Organic farming is looked at from the perspective of combining both traditional methods as well as latest scientific research innovative technology in order to ensure that there is a sustainable future. (http://www.organicfarmers.org.uk/ aboutorganics/organic_farming.php, 2008).

The perception of organic farming as per the Organic Trust Ltd, which is another organic certifying body in the UK, is that it is:

A very sophisticated and elaborate system of food production - all designed to produce food naturally and to ensure that potentially hazardous synthetic chemicals are kept out of the food chain. (http://www.organic-trust.org/about/, n.d).

Organic production here has been defined as elaborate and sophisticated, which are terms that m go with modernity, scientific know how and technology. This is again reflective of the technology approach to the theory of EM, which emphasizes on the use of technology and scientific knowledge in environmental protection in this case with particular reference to organic farming practices.

After a discussion on the definitions of organic farming in the UK, let us now look at how organic farming is perceived in India (Karnataka). This is what we can describe as the second view of organic farming.

Organic farming in India has been practiced for a very long time, over decades under the name of 'organic' farming although the farming practices seem to be no more than the traditional way of practices which have been followed for centuries to come on account of the poverty of farmers which prevents them from buying machinery and fertilisers. According to Brook and Gaurav Bhagat (2004) as well as Bhattacharyya and Chakraborty (2005), India's farmers are still practicing organic agriculture that has been passed down over the times. Brook and Gaurav Bhagat talk about how in India organic farming continues to be practiced by default. (Bhagat & Bhagat, 2004). This reveals the fact that organic farming is part of the tradition and culture in India. Organic farming has its origin embedded in some of the traditional agricultural practices that have spread across villages and communities over centuries in India. (Bhattacharyya and Chakraborty, 2005, p. 111).

Interestingly the authors also quote:

> **There is a brief mention of several organic inputs in our ancient literatures like Rigveda, Ramayana, Mahabharata, Kautilya, Arthsashthra etc. (Bhattacharyya and Chakraborty, 2005, p.111).**

The association of organic farming in India is with the tradition and culture of the country and thus seems to be very much native to India. A similar outlook is what is reflected through this definition of organic farming in the Indian context too. Organic farming techniques in ancient India made use of natural plant and animal products for use as fertilizers and chemicals.

> **Organic farming was the backbone of the Indian economy and cow was worshipped (and is still done so) as a God. The cow, not only provided milk, but also provided dung which was used as fertilizers. (http://www.organicfacts.net/organic-cultivation/organic-farming/organic-farming-in-india.html, 2006).**

Here, there is yet once more the emphasis on the fact that organic farming has strong Indian roots and is a very important part of the Indian society. Livestock (cows) and natural inputs were a prominent part of the agricultural practice system in India.

Nandy (1997) talks about his experience in using an alternative more sustainable method of farming. According to him, a single cow can act as a source of two tonnes of manure and 8000 cu ft of gas per annum. This is significant in terms of income generation and protection of the environment. (Nandy, 1997, p.25).

Here, the term ‘modern farming’ is used in opposition to organic farming methods. This possibly signifies the fact that organic farming methods are considered traditional and natural in nature rather than scientific and modern. The mention of the cow serving a useful purpose as a source of organic input apart from the fact that in the Indian society the cow is worshipped and is a part of the Indian society and culture according to Nandy (1997) further illustrates the traditional roots of organic farming in India.

The Commiserate of Agriculture of Karnataka has defined organic agriculture as:

> **A way of life in India, a tradition that for centuries has shaped the thought, the outlook, the culture and economic life of its people. (Commiserate of Agriculture, 2004, p.5).**

This definition of organic agriculture again emphasizes the traditional nature and significance of organic farming to the culture and society in India, (Karnataka).

India has been an agrarian society and is still largely one since it was founded a lot longer than decades and agriculture being a very important part of the country has made use of natural inputs for production of food for a very long time. A detailed account of the green revolution, the sectors it dominated and it's relation to traditional agricultural practices will be discussed in Chapter 4 of the thesis. A key theme of this thesis that will be discussed at much greater length, as far as India is concerned, or even the key difference between traditional and organic farming in India is the certification system, which acts as the link to modernity.

The Indian Organic Certification agency (INDOCERT) an organic certifying body in India is of the opinion that organic food production uses techniques that combine traditional as well as modern methods of production.

INDOCERT says that:

> **Organic systems rely on a modern and scientific understanding of ecology and soil science, while also integrating traditional agricultural knowledge. (http://www.indocert.org/agriculture.aspx, 2008).**

Organic farming is said by this agency to use a combination of traditional as well as modern techniques. This is done in order to protect the soil and increase its nutritional content for the production of food that is sustainable, in the process making using of external inputs in as minimal quantities as possible. The traditional knowledge is pertaining to producing and protecting plants that are grown organically and this is combined with the modern knowledge of using natural inputs in the form of "microbial fertilizers and bio control". (http://www.indocert.org/agriculture.aspx, 2008).

Here, it can be seen that the definition of an organic farming systems is different from the earlier definitions, which present only a traditional perspective of organic farming in India. This perspective on organic farming practices is similar to the concept of organic farming in the UK where modernity and latest scientific methods are associated with organic farming. This has been developed by an organization concerned with commercial trading for exporting organic products using certification to give the products their 'organic' identity.

However, there is a lack in the explicit definition of modernity of discussion about changes in bureaucracy. As will be discussed in the next chapter, this is where the existing ecological modernization theory is lacking.

According to Toke & Raghavan (2009):

> **Bureaucracy (in the form of the certification process), then, is the key to understanding organic farming as a contemporary commercial system. It is this system that 'fixes' the meanings of the products for the purposes of trading in the marketplace**. **(Toke & Raghavan, 2009, p.12).**

The differences between traditional and modern organic agriculture in India are concerned mainly with bureaucracy. In UK, there is no traditional farming unlike India but a necessary element for organic farming is the administrative procedure.

However, in systems where farmers produce food for themselves or their neighbours alone the need for certification system is much less. This does not point out to an EM situation. (Toke & Raghavan, 2009, p.13).

To support this statement Toke & Raghavan (2009) say that:

> **Organic farming is an active commercial set of enterprises concerned with expanding their sales in a well organised marketing system. The whole point of the certification system is to allow it to be traded as a commodity. (Toke & Raghavan, 2009, p.13).**

This assertion that modern organic farming is bureaucratic in nature in terms of the certification procedure can add something to theory of Ecological Modernisation by discussing the use of bureaucracy.

In India, a lot of farming has not changed. The certification procedure (bureaucracy) is what makes the difference between tradition and modernity. This is done for economic development purposes, in addition to trade to the west and for sale to consumers in the big Indian cities with increasing incomes. In the UK, whilst organic farming might utilise some modern machinery and marketing methods, it still can only be organic because of the certification systems. The organic market, which involves paying a premium for organic

products, has also occurred as incomes have risen. Here the Weberian bureaucracy argument is relevant.

Weber talks about the link between bureaucracy, modernity and economic development that leads to generation of capital. He is of the opinion that bureaucracy and modernity go hand in hand and they in turn churn out wealth. Economic development is responsible for weaving in big developments. This is a very important theoretical innovation which a new development to the theory of EM. This will be discussed in greater depth in chapter 2 of the thesis.

1.2 Organic agriculture as a natural system and holistic system

In contrast to the previous stream of literature reviews here, is a collection of literature, which perceives organic farming as a natural system of farming. In addition to that organic farming here is equated to a complete system, which comprises the soil, micro-organisms, plants, animals and humans that interact with another to comprise the whole system.

Shivashankar (1995) talks about organic farming in India saying that it has caught on in India with all those farmers and consumers who are seriously and consciously trying to do away with harmful chemicals and fertilizers for the benefit of a safe and healthy environment. Producers are also looking at how food production can be made more sustainable, along with being beneficial to the health of the soil and at the same time doing this by making good use of the available natural resources. The definition of organic farming is associated with the "Back to Nature Movement" in India. (Shivashankar, 1995, p.2).

According to the Organic Research Centre- Elm Farm, "UK's leading research, development and advisory institution for organic agriculture". (http://www.efrc.com/?go=ORC&page=What%20is%20The%20Organic%20Research%20Centre, n.d).

Organic farming is defined as:

> **A holistic way of producing food. Organic farmers think about the effects of their farming practices on the soil, crops and livestock on the farm, the quality of the food they produce, the local community and the wider environment. (http://www.efrc.com/?go= ORC& page= Organic%20 Farming, n.d).**

The European Commission defines organic farming as:

> **An agricultural system that seeks to provide you, the consumer, with fresh, tasty and authentic food while respecting natural life-cycle systems. (http://ec.europa.eu/agriculture/organic/organic-farming/what-organic_en, n.d).**

Further, according to the European Commission, an organic farming system is designed such that it operates in a wholly natural way. In addition to which, the effects that humans have on the environment is as minimal as possible. (http://ec.europa.eu/agriculture/organic/organic-farming/what-organic_en, n.d**).**

According to the Natural Organic Certification Association**,** which is an Indian organic certification agency, organic farming is about producing food in a natural, chemical free manner. The soil plays a central role in an organic system. The principle behind organic is to

allow Nature to provide humans food the way nature intended to. Here, the natural way in which an organic system operates is highlighted. (http://www.nocaindia.com/Organic%20 Agriculture.html, n.d).

1.3 Sustainability

In this section, organic farming is looked at not only in terms of a healthier environmental option to farming practices, but also as a kind of farming that could help bring about social and economic benefits. This not only benefits the environment, but also the farming community, public and society in years to come.

Sustainability according to Pretty is about making use of fewer resources or regenerating available resources and restoring the health of the environment. It has a number of benefits, which include integrating the rural community, aiding them in their social and economic development, helping produce food that is healthy, nutritious and safe for consumption (Pretty, 1999, p.16-17).

Langhelle (2000) talks about the definition of sustainable development consisting of two very essential components:

> **The concept of 'needs' in particular the essential need's of the world's poor to which overriding priority should be given and the idea of impositions by the state of technology and social organization on the environment's ability to meet present and future needs. (WCED, 1987, p.43) as cited in (Langhelle, 2000, p.307).**

Sustainable development stresses on giving high priority in meeting essential human needs. The objective of sustainability is in the ability of present generations being able to pursue their own objectives without neglecting the ability of generations in the future to meet their needs. (Langehelle, 2000, p.307).The whole idea of sustainability encompasses not only the needs of the present but also takes into consideration the needs of generations thereafter.

Shiva talks about organic farming in terms of sustainability. She says that:

> **These small-farmer centred, ecologically sustainable initiatives need scaling up to protect the environment, protect the land and livelihoods of small farmers, and produce more food. (http://www.navdanya.org/articles/articles22.htm, n.d).**

Protecting the environment and small producers and producing more food using lesser resources is what sustainability addresses.

The Organic Farmers and Growers Ltd consider organic farming to be a "modern and sustainable system". They define organic farming as:

> **A modern, sustainable farming system, which maintains the long-term fertility of the soil and uses less of the Earth's finite resources to produce high quality and nutritious food. (http://www.organicfarmers.org.uk/aboutorganics/organic_farming.php, 2008)**

1.4 Organic farming rules, regulations and policies

This section comprising of rules, regulations and policies for organic farming in the EU, UK, India and Karnataka will be discussed in length in chapter 4 of this thesis and hence will not be repeated in this chapter.

1.5 Ecological Modernisation

The next Chapter of this thesis (Chapter 2) discusses Ecological Modernisation in detail, which will not be repeated in this chapter of the thesis.

1.6 Conclusion

In this chapter, the traditional and modern perspectives t organic farming have been discussed in the first section. In the UK, the definition of organic farming can be linked to modernity. In India, on the other hand organic farming is linked with tradition, culture and society. However, there seems to be a change recently in the way organic farming is perceived. It is now considered to combine traditional knowledge and modern techniques. Organic farming is also described from the point of view of being a system that is natural and holistic in nature. Sustainability is another dimension to organic farming, which encompasses not only the environment, but also the social and economic angles to organic farming. Aspects on bureaucracy with respect to organic farming/food, modernity of organic farming, which has been highlighted through commerce, international trade and bureaucracy, is going to be discussed in detail and theorised in the next chapter.

CHAPTER 2

ECOLOGICAL MODERNISATION

The chapter introduces the concept of Ecological Modernisation (EM) and talks about it in more detail. Debates/criticisms surrounding EM have also been discussed in the chapter. The main aim of this chapter is to explain how Ecological Modernisation is reflected in organic farming practices today.

Ecological Modernisation (EM) talks about capitalizing on the environment without harming it. In other words, it has a dual role to offer. One being protection of the environment and ensuring sustainability, the other is helping generate revenue. Organic farming is one of the environmental friendly alternative methods of farming most popular in many countries today. Today organic farming uses modern technology. Organic farming is now perceived as an eco-friendly more sustainable form of agriculture that can be capitalized on. This is what EM represents. Hence, it is important to discuss in detail about EM, since it is relevant from the perspective of organic farming. Further reasons for the use of EM has been discussed later in the chapter,

The chapter first starts by introducing Ecological Modernisation. The origin of EM, what it entails and the perceptions of various authors on this subject have been discussed. Criticisms on EM have been pointed out in this chapter. This has been done in order to give a critical insight into the possible disadvantages of using EM for environmental policy planning. The next section discusses the reasons as to why EM has been used in the thesis, and how it is relevant with to organic farming in India and UK.

The year 1972, according to Hajer (1995) “is often taken as the starting point for the wave of environmental politics”. (Hajer, 1995, p.24).This was the time during which one of the biggest UN conferences was held in Stockholm, Sweden on the environment. The political scenario in the 1970’s saw a change in that the environment was given independent attention. There were ministries set up to cater to the environmental scenario. During this period, there was a legislative attempt to have some basic conditions for permitting the emission of substances. Environmental problems during this time were not given too much importance in the face of industrial politics. They were considered as problems that could be resolved through remedial measures rather than being looked at from a structural perspective and seeking preventative measures to contain them (Hajer, 1995, p.24). In the 1980’s there was a change in the environmental scenario with the introduction of a new environmental policy discourse, which was called Ecological Modernisation.

> **Ecological Modernisation can be defined as the discourse that recognizes the structural character of the environmental problematique but nonetheless assumes that existing political, economic, and social institutions can internalize the care of the environment. (Hajer, 1995, p.25).**

Hay (2002), talks about the emergence of Ecological Modernisation in the western society, to be specifically conceived for finding environmental solutions in Germany and Netherlands. The cooperation of the government and industry was necessary in order to tackle environmental problems. Having high standards for the environment called for the use of technology as a tool (Hay, 2002, p.228-229).

With the emergence of EM in the environmental policy making scenario, in the 1980's in the western world, the idea of prevention of pollution was integrated into the environmental administrative policy making scheme. This was done to avoid looking for solutions after the problem occurred. The Ecological Modernisation concept represents the active participation of actors in the process of environmental policymaking and it involves the merging of these policies into the economic decision making process as well. (Hajer, 1995, p.29-30).The concept of EM originated from the works of Huber and Janicke. According to Spaargaren (2000), they are considered the founding fathers of Ecological Modernisation approach (Langhelle, 2000, p.305).

Hajer (1995) attributes four factors for changes that took place within the environmental policy decision-making process that led to the emergence of Ecological Modernisation. "Radical environmentalism was caught up by the economic recession of the late 1970's". (Hajer, 1995, p.94). With the slackening of economic growth, environmental issues took a back seat, therefore in order to enable keeping its "social credibility" a way had to be found in order to weave in the environmental issues with economic growth. Secondly, a change could be seen in the attitudes of actors involved in the environmental movement. The feelings of adopting mass demonstrations and confrontational styles in order to put one's thoughts across were being reviewed and no longer considered as a viable option in terms of social growth with respect to environmental issues. Instead, alternative means of addressing the environmental problems were being considered (Hajer, 1995, p.94-95). The third factor involved other environmental problems like acid rains that were damaging the ozone layer. This paved the path for NGO's like Sierra Club, and Friends of the Earth in demonstrating the vicious effects of industrialization and the possible threats that the society faced because of that. (Hajer, 1995, p.95). The fourth factor was the availability of an alternative solution to

tackling environmental problems, an alternative environmental discourse in other words. The possibilities of alternative solutions in resolving the environmental crisis, in the form of ideas being generated over ecological Modernisation were already making its rounds among "academic circles and expert organizations" (Hajer, 1995, p.95). Ecological Modernisation thus was seen as a new solution for tackling the environmental issues.

Ecological Modernisation as a concept consisted of some essential themes according to Mol and Sonnenfeld (2000).

a) The news that science and technology offers in preventing environmental problems, initially being looked at from the perspective of damaging the environment, they now could be seen in a different role, in that they were seen as a means in helping cure the environmental crisis.

b) Dynamics of the market and actors like producers, consumers, environmental organizations etc, were seen as media in bringing about ecological restructuring.

c) A change in the way the state functioned, in that it was more flexible, with rules and regulations pertaining to the environment that were not so rigid. There was more authority for non-state actors to take decisions on administrative, regulatory and managerial roles. This was concerned with environmental reforms.

d) Restructuring the society for environmental decision-making process.

e) Regarding the environment and economy as different entities was no longer valid. In other words, disregard for the environment and separating the economy and environment as two different entities called for change. Ecological Modernisation revolved around these core presumptions.

f) At the end of the 1980s, and in the 1990s in the UK and the EU, organic farming began to be viewed as a technological solution to the environmental problems caused by conventional farming. There could be laws to regulate it as part of regular economic trade. This development came later in India, which reacted, to the growing markets for organic food in the West in the 1990s. It did this by deciding to regulate organic food in the year 2000 so that Indian produce could be marketed in the west as 'organic'.

Weale (1992) as cited in (Langehelle, 2000, p.305) is of the opinion that the strategies regarding environmental protection, in the theory of EM were based on the assumptions that there could be in the government a special branch for dealing with the environmental problems. Finding solutions to environmental problems could be integrated with economic development for which standards had to be made. However, these means of solving the environmental crisis, according to the assumptions did not help. "Instead they resulted in problem displacement across time and space rather than problem solving". (Weale, 1992, p.76) as cited in (Langehelle, 2000, p.305).

Young (2000), talks about Ecological Modernisation as an attractive prospect for environmental policymaking. This was because it addressed the need for restructuring the

society and institutions, and at the same time, it did not discard the idea of weaving in capitalism along with this. (Young, 2000, p.20).

Ecological Modernisation according to Young (2000) seeks to use a technology driven approach and make use of innovative ideas in its quest to protect the environment. This is in addition to restructuring of the institutions and society and finding solutions to protect the environment.

Jokinen (2000) talks about how there are prospects of strengthening new, increasingly global economic activities and environmental governance. This is possible by focusing on the institutional relationship between information, society, policy issues and environmental policy issues. (Jokinen, 2000, p.173-181). He talks about how the concepts of "Sustainability" and "Ecological Modernisation" cannot avoid the problem of social and institutional arrangements. Jokinen (2000) further talks about EM in terms of the positive changes that it can have on environmental policymaking and its potential to unite the environment and policies of society.

EM can be defined as "implementation of preventative innovation in production systems (processes and products) that simultaneously produces environmental and economic benefits". (Milanez and Buhrs, 2007, p.573).The concept of EM has been contributed to by four variant approaches. The first being technology, followed by policy, social and economic approaches.

In order to understand what EM is about and what it constitutes it is of significance to understand each approach individually.

2.1 Technology approach

The origin of EM points towards the German sociologist Huber, who looked at technological innovation as being driven by environmental demands. This approach to EM looks at technology as the saviour for the environmental crisis. Technology here is visualized as a preventative step towards causing environment pollution and at the same time enhancing economic benefits.

This approach to EM looked at technology, from the perspective of entering an era of industrialization that would lead to a solution pertaining to the ecological crisis

Milanez and Buhrs say that:

> **Preventative measures can reduce cost, increase efficiency enhance competitiveness, thus producing both economic and environmental benefits. (Milanez and Buhrs, 2007, p.556).**

2.2 Policy approach

In the late 1980's there was another approach to EM, the focus was on the government as a driving force to resolve the environmental crisis. (Milanez and Buhrs, 2007, p.568). Here the traditional environmental policymaking has been criticized because in spite of the rules and regulations the society still faced environmental crisis. From an eco-modernist perspective, the need was felt for voluntary agreements and market instruments. These policy instruments were looked at from the perspective of being more flexible and innovative in terms of solutions to environmental problems. This involved government encouragement that included use of participatory policy processes for effective policy implementation. Here, the stress is

on the fact that in the making of policies the involvement of the government, industry and environmental organizations is important.

An example that can be quoted with respect to the policy approach is that of the acid rain problem that Hajer (1995) talks about. The way to understand the problem of acid rain is not just by merely understanding the way in which this ecological phenomenon occurs but it is also necessary to get into:

> **Questions of cost, abatement techniques, analysis of social and economic repercussions of the different remedial strategies, and ethical questions concerning the fairness or the attribution of blame and responsibility. (Hajer, 1995, p.45).**

A policy approach to acid rain and the preparation of a policy document on it would involve participation from various domains like physics, ecology, mathematics, engineering, philosophy, tree physiology. (Hajer, 1995, p.45). Communication among the actors from various disciplines and their ideas and contributions would be very crucial in looking for a solution to a problem like acid rain. Hence, bringing about a significant contribution to the policy framework directed towards it.

Barry talks about Ecological Modernisation as:

> **An account of how existing political and economic institutions, through innovative changes, have responded to public and environmental movement. (Barry, 2003, p. 192)**

The government in this case has to deal with how to cope with increasing environment problems. Institutions such as the government play a very crucial role in fixing the problems that the environment poses. In addition, industrialization that uses modern technology does not harm the environment. Instead, in the western world, such industries are following the environmental regulations and at the same time, they are benefiting by "improving their competitive market position". (Barry, 2003, p. 192**).**

It can be seen here that. The government plays an important role in the environmental policy process. The idea is about making use of technology and industrialization in achieving environmental sustainability. This can be achieved by reducing pollution and making use of resources in an efficient manner.

2.3 Social approach

The third approach is the social approach where the emphasis is on social behavior. First studies that built this school of thought date from late 1980's where authors put forward ideas of how consumption of environment friendly foods, market and social movements could bring about a change in the production system. Focus was on role of social movements and consumers (Milanez and Buhrs, 2007, pp. 569-570). Here environmental theorists were of the notion that the growing consideration for the environment was directly related to people increasing their consumption of green foods. Consumption patterns were seen as a move towards environmental progress.

According to Bluhdorn:

> **Ecological Modernisation as a theory of social change reflects on this process of institutionalization of environmental concerns in terms of the**

> **need to conceptually refine the existing models that are used within social science to analyze processes of Modernisation and rationalization. (Bluhdorn, 2000, p.53).**

Here, the reference is to the fact that in terms of a social change, EM highlights the fact that there is the need for restructuring of the existing models within the modern society. Instead of viewing the modern society as a bane in helping out with the ecological crisis, it is possible to bring about changes within this modern society that would help in tackling the environmental situation.

2.4 Economic approach

This approach to EM talks about" decoupling" where in the notion is that:

> **In traditional economies, the production of pollutants is a function of overall economic output, whereas eco-modernist countries have broken this connection and decoupled economic growth from environmental impacts. (Cohen, 2000) as cited in (Milanez and Buhrs, 2007, p.571).**

Two main reasons have said to contribute to the decoupling one being the "technique effect "and the other the "composition effect". (Milanez and Buhrs, 2007, p.571).

Technique effect is related to decoupling because of looking at environmental problems from the perspective of technology-based solutions. Composition effect is attributed to by changing focus from raw materials and resources to knowledge that is there. The theory supporters felt that the fact that the ecological crisis was brought about by the design of modern institutions was true. However, this did not imply that these modern society

institutions with their modern production and consumption methods needed to be done away with. In fact, there was the need for reorganization of these modern institutions. (Mol et.al, 2000, p.19).

2.5 Supports for Ecological Modernisation

The theory of Ecological Modernisation, talks about the situation of a post-industrial society. One of the distinctive characteristics of the theory of EM is that authors consider technology to resolve the ecological crisis. On the other hand, the radical ecology theorists consider industrialization and technology to be a hindrance in the way of resolving the ecological crisis. (Fisher and Freundenburg, 2001, p.702).

EM is distinct from any environmental theories in the past, because of some reasons. One being that, the solution to resolving the environmental crisis is also economically beneficial. Actors and market dynamics are seen playing a crucial role in bringing this about. Secondly, Fisher and Freundenburg argue that:

> **In the context of the expectation for continued economic development, Ecological Modernisation depicts political actors building new and different coalitions to make environmental protection politically feasible. (Fisher and Freundenburg, 2001, p.702).**

The solution to the ecological crisis according to the EM lies in bringing about a change in the technology and progressing in the direction of industrialization. Huber (1982) who first presented the theory of EM cited in (Bluhdorn, 2000, p.53) “refers to the ecological switch-over in the context of his substantiate analysis of the western industrial mode of production”. Huber regarded technology and science, as being very fundamental towards solving the

ecological crisis. Bluhdorn (2000) says that Huber uses the term “ecologizing the economy”. This according to Huber describes the fact that the ecology should be looked at from the perspective of modernity. Here, Huber is of the notion that modern science and technology are the answers to the environmental crisis.

Janicke (1986) cited in (Bluhdorn, 2000, p.46) on the other hand is of the opinion that the process of EM should have backing from the state. It was not possible to tackle the environmental crisis unless the state intervened in some form. The state here was considered as very essential in steering the path of society towards the greening of production as well as consumption.

Hajer (1995) speaks about the 1980’s where environmental policymaking was looked at from a different perspective. Primarily, a solution was sought in preventing an environmental problem, rather than curing it. Secondly, science played an important role in the policy making process of the environment in the context of EM. Thirdly, Hajer (1995) says that:

> **On the micro-economic level the shift to EM surfaces in the move away from the idea that environmental protection solely increases cost to the concept of pollution prevention pays. (Hajer, 1995, p.27).**

Fourthly, the concept of EM tries to reduce the cost in economic terms of environmental protection. Fifthly, since nature has to be protected from pollution, any act of pollution is the fault of the individual polluter. It should be their concern and not “of the damaging or prosecuting party” (Hajer, 2005, p.28). Lastly, EM is a consideration again of an environmental problem that can be comprehended as it talks about taking precautionary

measures in environmental protection. Regulatory management of the environmental crisis took into consideration sustainable development as well.

2.6 Criticisms of Ecological Modernisation

Spaargaren (2000), talks about the likely questions that could arise with regard to Ecological Modernisation. This includes whether it is really so simple to restructure and repair the fault of modernity which the theorists of Ecological Modernisation would like to believe? (Spaargaren, 2000, p.213). Is it possible for environmental improvements to take place through the information derived out of changes taking place ecologically because of the restructuring of modern society and institutions? This could be true to an extent in that environmental damages have been caused over a span of time. To address the problem by seeking to restructure the society and institutions could be a very big task and it may not be possible in the context of every nation, as societies, and the structure of institutions varies from one nation to the other (Spaargaren, 2000, p.213). In other words, this assumption of the theory may not be relevant and easy to follow in all contexts.

In relation to the point made previously the other major critique of the theory of EM that can be cited is whether this theory is of use or whether it can be utilized in other countries? According to Fisher and Freudenburg (2001) scholars such as Hannigan (1995) have pointed out that the theory maybe reasonably appropriate for nations such as Germany and Netherlands, where most theoretical development has taken place, while proving far less realistic for countries such as United states (Fisher and Freudenburg, 2001,p.704). The question that is of utmost relevance in this context is whether EM has failed to look into the cultural aspect of where a nation is concerned. EM calls for a strong kind of public commitment and environmental awareness among people and nations. Hence, taking into

consideration the cultural build up of a country is a very crucial which EM seems to fail in taking into count.

One of the most common criticisms against EM since the day the theory came into existence is the fact that the theory talks about a technological solution for tackling the environmental crisis. (Mol et.al, 2000, p.20).

Another criticism put forth by Giddens (1998) cited in (Fisher and Freudenburg, 2001, p.3) says that Ecological Modernisation does not look at "some of the main challenges ecological problems pose for socio democratic thought". Buttel (2000) cited in (Fisher and Freudenburg, 2001, p.3) criticizes the theory of EM saying, "It lacks an identifiable set of postulates". One of the main reasons that criticisms on EM arise is because of whether it could really help protect the interest of humankind.

Dobson (1990) as cited in (Toke, 2001, p.283) criticizes the theory of EM saying, "Without the arguments of radical ecologists, there is no reason for industrialists to care about future generations. Second even in those parts of the world that have high environmental standards, environmental protection can still be costly".

Ecological Modernisation could also be problematic in that geographically, it may not be able to address environmental problems equally. In a country like India, for instance the geography, weather conditions, climate, fauna, etc. vary which would mean that EM would have to address different environmental problems at different levels, thus there would not be uniformity and it could mean that it would be difficult to make a common environmental

policy throughout the country. However, a common criticism is that EM is more applicable to the North than to the South. Toke says that:

> **EM addresses problems in the North which are at a different stage (or pursuing a different type) of economic development to that of the South. (Toke, 2001, p.287**)

The topography and climatic conditions varies from one end of a country to another, to apply EM at the same level could be difficult, as the kind and nature of environmental problems and especially, stages of economic development may vary from one part to the other. In addition, this relates to sustainable development, which is discussed later.

Beck (1998) cited in (Toke, 2001, p.288**)** is of the opinion that the theory of EM "is a moderate and conservative theory confirming business as usual, that it does not deal with issues of social equity and that it may promise more than it can deliver".

The critique here is that EM is a concept that is likely to be more applicable in the western context or rather it was a theory generated from a more western perspective, whilst the general society is not considered, the inequalities existing are not considered and could hinder any kind of development or progress. Taking into account the assumption that EM talks about environmental protection and economic development together, a question that could arise is that in a country in one part the state the economic status may be different from the other part. The possible reasons being variations in climate, resources etc, so would it be possible in such circumstances to apply EM in this scenario and expect the same outcome in the country? This is one of that EM fails to address.

The theory of EM was conceptualized from the perspective of Western countries, and originally it was created from the point of view of incorporating into the environmental policy making process in the western countries. This being the case, can EM be applied to other countries as well? The thesis, in part seeks to find out if EM, a western borne concept, has its application in organic farming in India? This is a key research question in this thesis.

2.7 Ecological Modernisation versus Sustainable Development

EM as a tool for environmental policymaking can be compared and contrasted with Sustainable development as an alternative tool. The reason is that though both of them can be conceived of for environmental policy decision making, they are different from one another. It would be useful to discuss sustainable development briefly, in this context. Langhelle (2000) talks about the definition of sustainable development consisting of two very essential components:

> **The concept of 'needs' in particular the essential need's of the world's poor to which overriding priority should be given and the idea of impositions by the state of technology and social organization on the environment's ability to meet present and future needs. WCED(1987) cited in (Langhelle, 2000, p.307).**

Sustainable development stresses on giving high priority being able to meet essential human needs. The objective of sustainability is in the ability of present generations being able to pursue their own objectives without neglecting the ability of generations in the future to meet their needs. (Langehelle, 2000, p.307).The whole idea of sustainability encompasses not only the needs of the present but also takes into consideration the needs of generations thereafter.

Sustainable development can be explained from the perspective of agriculture. Pretty (1998), talks about sustainable agriculture having many added benefits. Not only does it improve the state of the environment but it also integrates the rural community, aids in their social and economic development and helps produce food that is healthy, nutritious and safe for consumption. Hence, sustainable development stresses on meeting the basic needs of rural communities and weaves in the elements of social and economic development into it.

To summarize, sustainable development seeks to find solutions to environmental problems on a global scale and does not talk about integrating economic returns with environmental policy planning unlike EM. In addition, EM is a western oriented concept that was developed more from the perspective of western industrialized societies, whilst sustainable development as a concept is applicable to all kinds of societies and is particularly relevant in the context of third world countries as it stresses on meeting basic human needs as the primary requirement above anything else. EM also encompasses the politics of environment, it talks bout including government and national level organizations in the process of environment policymaking decision. While on the other hand, sustainable development emphasizes on the need to nurture the relationship between the environment and humans.

Langhelle says that:

> **As such, sustainable development puts climate change (and energy) on top of the agenda for environmental policy. Ecological Modernisation, on the other hand, contains no criteria by which environmental problems can be weighed. (Langhelle, 2000, p.312).**

Therefore, it implies that sustainable development has a particular priority on what the environmental policy plan should have topmost on the agenda list. On the other hand, EM does not give priorities to any particular ecological problem. Sustainability seems to go one-step beyond by taking into consideration human food needs with respect to not only present generations, but also future generations. This takes into account the need to attain food security, this could be very important from the perspective of an environmental policy plan of any nation.

2.8 The use of EM in the thesis

Organic farming is tapping modern technology into its practices today, which are pro environment. Organic farming is associated with rules and regulations. The setting of these standards involves state, social movements, entrepreneurs and market forces. Organic farming has entered a stage where the produce grown organically is being exported from India and traded inside the EU too. In both India and UK the trade, both domestically and internationally needs to be regulated by the state. Details of various International certification standards set for organic products that are exported from India will be discussed in chapter 4 of the thesis as well as the details of regulations in the UK will be discussed in the same chapter. Export of organic produce underlines the fact organic farming sector today is a income generating sector All these points are conducive with EM.

There could also be a direct connection between bureaucracy and EM. Max Weber claims that the process of bureaucracy and generation of wealth are intertwined. Runciman, W. ed. (1978) cited in Toke & Raghavan (2009) talk about modernity, bureaucracy and the process of capitalism leading to economic development which points in the direction of Ecological Modernisation.

According to Runciman, W. ed. (1978) cited in Toke & Raghavan (2009):

> **Increasing bureaucratisation is a function of an increase in wealth available for and used for consumption and of a technology of the external organisation of life which is increasingly sophisticated and corresponds to the possibilities so created. (Runciman, W. ed. 1978, p. 347-349).**

According to Toke and Raghavan (2009), there can be an association between Weber's theory with certain themes of EM:

> **Weber's argument with the themes of EM regarding economic development being linked to greater cultural demands for quality and such commodities being delivered through increasing bureaucracy. (Toke and Raghavan, 2009, p.8**).

Bureaucracy is very important from the perspective of determining the environment friendly nature of a product in terms of certification and legitimizing it. Economic development in turn has led to increasing demands for good quality and environmentally safe products, which have undergone the process of bureaucracy. Organic food though ecologically safe and sustainable has to undergo the process of bureaucratic certification to be available to consumers and in mass markets. "In this sense, EM bureaucracy is a commodifying process". (Toke and Raghavan, 2009, p.8-9).

It can be said that there is a system of bureaucratic measures to ensure that organic products undergo the regulatory processes. In addition, there are mechanisms that are set by either the

government or private bodies to be able to qualify as safe and environment friendly. (Toke and Raghavan, 2009, p10).

Organic farming has become bureaucratic in terms of the increase in rules and regulations. This is with particular reference to stringent certification procedures that apply today to modern organic farming. In India, the traditional system of organic agriculture that is practiced in masses is not organic in terms of it not having gone through the adequate bureaucracy and hence not being a "legitimized commodity". The modern notion of what organic food is about in terms of "a tradeable commodity in a mass market" rests on the credentials of its certification. (Toke & Raghavan, 2009, p.19).

In Indian organic agriculture, well-known figures like Shiva refer to westerners like Albert Howard as "the father of modern sustainable farming". Howard is said to have devised the method of composting. Composting is "encouraged by western organic standards" in the UK but it is not mandatory. This signifies that traditional agriculture in India in theory does seem to "pass the organic certification inspection regimes". (Toke & Raghavan, 2009, p.20).

In India, a lot of farming has not changed. The certification procedure (bureaucracy) is what makes the difference between tradition and modernity. This is done for economic development purposes, in addition to trade to the west and for sale to consumers in the big Indian cities with increasing incomes. In the UK, whilst organic farming might utilise some modern machinery and marketing methods, it still can only be organic because of the certification systems. Take the example of the Soil Association, which certifies up to 70% of organic foods in the UK, is responsible for the marketing of these organic products. "The Soil Association organic standards logo is a recognized brand name in itself" used by major retail

outlets for pushing their sales up. This is reflective of the organic bureaucracy. Apart from this, bureaucracy also extends to "record keeping and compliance procedures undertaken by the farmers themselves". The regulations are often updated and maintenance of records is essential by farmers to show that they have complied with the rules and regulations. The Organic industry hence "has to operate in a commercial world and adopt the same 'modern' marketing techniques of the mass food market if it is to prosper". (Toke & Raghavan, 2009, p.16).

The organic market, which involves paying a premium for organic products, has also occurred as incomes have risen. Here the Weberian bureaucracy argument is relevant. This signifies the importance of the theoretical insight on bureaucracy and Ecological Modernisation.

Key to modern organic food is a mixture of both, technology that has been developed as well as bureaucracy. These as well are very crucial aspects of Ecological Modernisation. (Toke & Raghavan, 2009, p.20).

An important fact is that certification is the factor that clearly outlines the difference between traditional and modern organic farming. According to Toke & Raghavan (2009):

> **The demarcation is largely a bureaucratic one that is associated with contemporary capitalist commodification of environmental goods in an age of Ecological Modernisation. (Toke & Raghavan, 2009, p.22).**

Organic foods now have become bureaucratic in terms of the certification processes that they entail. The credential of being certified is very essential for the mass marketing and

trading of organic foods. The bureaucratic nature of organic foods has ingredients of Ecological Modernisation. Organic foods have markets that are on the rise because of increasing incomes and wealth, the same holds true for Ecological Modernisation. Toke and Raghavan (2009) talk about how traditional agriculture practiced in India, though sustainable in nature is "associated with poverty". (Toke and Raghavan, 2009, p.23).

This traditional system of farming is approved by the state and the product becomes legal only when it is certified. This is the prerequisite of an eco friendly product entering the capitalist world where it is traded. This is illustrative of the fact that bureaucracy is "a key element of Ecological Modernisation". (Toke and Raghavan, 2009, p.23). The trade of organic products on an international level gives the feeling that Ecological Modernisation is related to what globalization is about. The commercialization of organic foods today, is in keeping with the modern industrial world and is different from the identity that organic farming represents, "as a practice which reverses the alleged deficiencies of 'industrialised' agriculture". (Toke and Raghavan, 2009, p.23).

In the UK, in contrast to India, the process of certification is only in order to prove the authenticity of the organic nature of the product, for consumption domestically rather than for trading or export purposes. The commonalities that arise with organic foods in both countries are that organic farming has been projected to be "a reaction to the industrialization of agriculture", also in both cases "organic food appeals to the more affluent sections". (Toke and Raghavan, 2009, p.23-24).

In this section, the thesis attempts at reflecting EM in the organic farming practices in UK and India (Karnataka). Some themes that EM entails are as follows and these bear significant relevance to the thesis:

2.8.1 Combination of environment and economic development

EM is viewed as a "socio-political program of reform that indicated softening of the belief in the incompatibility of high-tech capitalism on one side and ecological sustainability on the other hand" (Spaargen, 2000, p.210). It is looked at from a more realistic perspective of combining technology and modern knowledge in combating the problems of the environment. This particular theme is significant in the context of organic farming. Today organic farming has become more industrialized. It is viewed from an economically beneficial perspective combined with a way of tackling the environmental problems. But there are critiques of this approach to organic farming who say that the organic sector in England today has given up on the traditional organic philosophy which is about farming being on a small scale and non-commercialized, something more local, instead of which it has taken a turn towards the corporate world for economic gains. Therefore, it seems that EM in the light of organic farming is a debatable issue, and its application to the organic farming sector could be a contentious issue.

2.8.2 Incorporation of this concept in commercial, mainstream organic farming practices

The concept of EM takes into account the social, political and economic aspects in tackling environmental problems, this policy oriented approach to handling the ecological crisis of the modern society. This could be of relevance in the organic farming scenario, as organic farming of late has developed into a more commercialized way of encouraging sustainability.

As mentioned previously EM is a western oriented concept, from the perspective of environmental policy making process. Whether it can be adapted in the case of organic farming in a non-western country like India and how this could be compared to a western country like UK is what the thesis attempts at finding out.

2.9 Sociology of organic farming

Talking about Organic farming from a sociological perspective, where the Organic agriculture movement in the UK was concerned it began with people and Organization interested in learning more about organic farming and also practicing as well as promoting it. The Soil Association was a major organization that was pivotal as a large social movement for promoting organic agriculture whilst rebelling against genetically modified foods during the foot and mouth disease breakout. (Tomlinson, 2008, p.237).

The Soil Association has played a major role where the organic sector in the UK is concerned. Tomlinson (2008) says that:

> **Different 'organics' are seen as socially constructed and circulated in a dynamic manner that continually mirrors and reshapes the contexts in which the production and consumption of organic produce occurs. (Tomlinson, 2008, p.138).**

To further support the fact that organics revolves around the social context at the beginning of the twenty first century in the UK organic was considered as consumer centric, where in the consumer's choice was key for the government to make its agenda with respect to organic farming. (Tomlinson, 2008, p.143). The whole objective is to place in the government plan

the consumer at the centre and focus on how the organic sector can be further developed keeping in mind the consumer as central to this. (Tomlinson, 2008, p.143).

Tomlinson (2008) quotes (Tovey 1997; Moore 2006) saying that organic farming goes beyond being a set of agricultural practices; it is also rooted in a social movement. Further, Tomlinson (2008) also quotes (Pederson and Kjaergard, 2004) saying that it can be said that organic agriculture provides for the creation of alternative forms of everyday life and construct new values and interests in agriculture.

Tomlinson (2008) argues that organic farming is recognized as a legitimate 'niche' market due to the involvement of the government while industrialized farming was left untouched. Government support for organic farming made it seem less of a threat and more of an eco friendly product that had a brand, which tried to increase its position in the market in an already existing capitalist market that was conventional in nature.

Busch (2000) is of the opinion that organic farming has become part of the 'moral economy' of the food industry and grades and standards are in turn an important part of this moral economy as they are reflective of the quality of a commodity. Busch (2000) goes on to say that there is standardization of markets apart from standardizing of quality goods. In most markets that have a consumer base the products that are sold have a price that has been fixed and the products as well as the way in which they have been packed are standardized. (Busch, 2000, p.279).

Standards are developed with the perspective that they are self-explanatory and can speak for themselves. According to Appadurai (1986) cited in (Busch, 2000**,** p.280):

> **In all societies, consumption is socially regulated. However, in non-capitalist societies there are no consumers. Consumption is regulated by tradition. In contrast, in capitalist societies consumption is regulated by fashion. (Busch, 2000, p.280).**

Standards are consorted by various kinds of bodies, which can be National/International governmental standards bodies, industry and independent standards setting bodies, industry leaders, specialized standards setting bodies and purchasing agents. (Busch, 2000, p.281)

Standards bring with them discipline, restructuring and change or transformation of not the commodity alone that needs to be standardized but "all those persons and things that come in contact with them". (Busch, 2000, p.281). Organic farming today with its grades and standards is as mentioned previously reflective of the moral economy in case of the food industry.

Guthman (2004) says, "Organic farming is regulated by national and sub-national systems of certification". (Guthman, 2004, p.307). These systems of certification include "independent and/or state sanctioned agencies" that check if the organic producers and marketers are following the rules that are part of what the organic farming practice should entail. (Guthman, 2004, p.307).

Organic production and the participants who may be involved are dependent on what these rules exactly spell out. Organic certification for instance does not encourage the use of chemicals be it pesticides or fertilizers. Some certifiers in fact encourage organic farmers to make their farming systems more self-sufficient and hence, sustainable. The methods of

achieving this entails “complicated crop rotations, recycling all nutrients, and relying on biological pest control”. (Guthman, 2004, p.307).This kind of practice system would aid in motivating new organic farmers as they could substitute inputs that are not allowed in an organic farming system by those that are permissible and at the same time as effective as the former inputs. Rosset and Alteiri 1997, Guthman 1998 cited in (Guthman, 2004, p.307-308).

Where organic farming standards are concerned apart from certification bodies “agri-business firms” too can have a role in defining the organic standards, which goes to show that there are different interests in defining what standards are. Clunies Ross (1990) cited in (Guthman, 2004, p.308). An example has been cited on the “tension between what she calls Purists and Pragmatists in the British context”. (Guthman, 2004, p.308). The Soil Association that had old time producers who wanted their standard to be the one for the UK represented the purist. They had a competitor which was a new organization that comprised of “Commercially minded growers” who tried to give organic farming a wholly new definition by providing “certification on a scientific basis” in addition to developing a more diluted version or “highly watered downgrade” of organic standards to help farmers convert to organic during the “conversion period”. (Guthman, 2004, p.308).

Therefore, it can be said that where organic farming standards are concerned there are different opinions, be it from the perspective of certification bodies or agri-business firms while which perceive organic in terms of industrialization. Agri-business firms “practice a shallower form of organic farming”. (Guthman, 2004, p.310).

Guthman (2004) talks further about how the price competition within the organic sector has led to agri-businesses benefiting by the diluting of organic standards, which is decreasing the

margins that small-dedicated organic farmers rely on. This could lead to the “erosion of organic practices” resulting in a more capitalist form of agriculture. (Guthman, 2004, p.312).

The discussion on organic farming by all the three authors i.e. Tomlinson (2008), Guthman (2004) and Busch (2000) can be linked to Ecological Modernisation (EM). This is because organic farming is being absorbed into the mainstream capitalist economy and subjected to the regulations of the mainstream food industry that allow it and promote it to take an increasing part in trade in mainstream capitalist markets. Organic farming is considered as a legitimized market supported by the government, a farming system with standards, rules and regulations that it abides by. Today, the organic farming sector is oriented towards a market that is oriented towards economic returns.

2.10 Conclusion

Summarizing the discussion in this chapter, EM was developed from the perspective of trying to be able to cope with environmental problem in the western part of the world. Changes were made in the society’s institutions and the way in which they functioned in order to address the needs of the environment because of industrialization. The probable reason for EM being a western centric concept could probably be attributed to the fact that industrialization was at its peak in the western oriented societies .The protection of the environment was not being taken too seriously. This called for a strategy to help resolve the environmental crisis without shunning industrialization or technology. This was since technology also seemed to be at its peak where industrialization in western societies was concerned Ecological Modernisation describes the increasing incorporation of organic farming into conventional food trading markets, with parallel sets of regulations, which tend to favour big organic producers rather than the small-scale production for strictly local use

that is stressed by foundational organic theorists. Bureaucracy is very important from the perspective of determining the environment friendly nature of a product in terms of certification and legitimizing it. Economic development in turn has led to increasing demands for good quality and environmentally safe products, which have undergone the process of bureaucracy. Organic farming has become very bureaucratic in nature with administrative procedures in place. Though organic foods are known to be ecologically safe and sustainable, it still has to undergo the process of bureaucratic certification. Without being, certified organic foods would not be made available in markets. There is a relationship between EM and bureaucracy according to Weber. Organic products that have undergone the process of bureaucratic certification are made available to consumers worldwide. As incomes rise increasingly there is a demand for organic foods by many several ecologically discerning consumers. This is related to economic development, which in turn can be linked to EM. Modern organic farming relates to bureaucracy of organic foods in a capitalist society. This is associated with generation of wealth on one hand and markets on the other that caters to ecologically aware societies and individuals. Hence, EM and bureaucracy do have a strong interlink.

In Chapter 4 of this thesis, there is a discussion about various standards for organic food in India. This includes International standards that have been set for domestic organic food to be promoted in western markets. This emphasizes once again that organic food is being incorporated into mainstream food markets to increase economic development. In the case of poor Indian farmers exporting produce to western markets the Indian farmers are being absorbed into a system (international trading in food markets) in which they were not involved before the advent of organic marketing, revealing the capitalist nature of the organic sector in a developing country like India too.

CHAPTER 3

ORGANIC FARMING IN THE UK

This chapter concentrates on the definitions of organic farming in the UK and the different perspectives on it. The main intention of this chapter is to discuss the transition that organic farming has undergone and see how Ecological Modernisation is reflected in the organic farming practices in UK. The chapter begins by discussing the significance of EM in organic farming. Then the chapter goes on to explain about the EU council regulations that came about in 1991 for organic farming. After the EU regulations, UK legislation on organic farming has been discussed. Finally, the various organic certification bodies in the UK have been discussed in light with influences from Ecological Modernisation.

3.1 Ecological Modernisation and organic farming

Organic farming was perceived in earlier times as an alternative environment friendly method of farming that rejected the use of intensive chemicals in the process of production. Instead, it contributed to the fertility of the soil and well-being of plants and animals.

Organic farming gained importance in the UK in the 1990's out of environmental concerns and food scares. It was considered a good way of maintaining a healthy environment in the countryside. However, today organic farming is perceived not only as an alternative method of farming that takes into consideration plant protection and animal welfare. It is also synonymous with technology and modernity. Organic farming which was started on a local community basis, meant for the local farmers and consumers has now gone global and become much bigger in terms of the market.

There is a, prime facie cause to argue that in the context of organic farming in the UK, EM is very significant. The reason being that the common point that seems to underlie EM and organic farming today in UK, is the fact that EM was conceptualized from the point of view of protecting the environment and at the same time using technology to achieve this which is similar to what organic farming concedes with.

Secondly, there was the need to reconstruct the pattern of thinking and hence restructure the institutions of the society in order to address the environmental concerns, which was depicted by Ecological Modernisation. Organic farming got importance after the hazardous effects of chemicals on the environment and humans. To prevent further environmental deterioration, an alternative method of farming was sought and this required a change in the way the people and the government in general viewed agriculture and food. The emergence of organic farming in this respect seems to have taken after EM in that, it called for a change in the society's attitude towards the environment.

Definitions of organic farming in UK and India that have been discussed in detail in Chapter 1 as already pointed out in the same chapter reveals the fact that organic farming is associated with being modern and technology savvy. Organic food now is not restricted to the local consumers anymore, but is being available to people in other parts of the world as well. This goes to show, that today unlike earlier, the organic market seems to be a flourishing business enterprise too, which justifies what EM entails.

The UK government has had a major role to play in the decision making process where the environmental policy is concerned, in this case specifically with respect to organic farming. So apart from the involvement of consumers and other major environmental organizations

like the Soil Association the government has had a big hand in evolving the policies where Organic farming is concerned. This could be tied up to the policy approach of EM, which speaks about the government being involved and having a major role to play in policy decision making apart from environmental organizations and other industries. (Details of the policy approach on EM have been given in chapter 2).

In addition, it is evident that bureaucracy plays an important role with respect to organic farming in the UK. The fact that this process of bureaucracy makes it possible for organic foods to be available to consumers all over the world who are able to afford it, shows that there is a close relationship between bureaucracy and EM, which also talks about economic development, wealth generation and techno savvy methods of environment friendly agricultural practices.

3.2 EU legislation on organic agriculture

Moving on this section discussed the EU legislation on organic agriculture beginning from 1991.Organic agriculture, as a method of farming was not given prominence. This scenario changed towards the end of the 1960's and beginning of 1970's where attention was focused on protecting the environment. With respect to this, there were different interest groups and associations formed that consisted of producers, consumers and other environmental organizations which supported the cause of the environment. These organizations had their own set ways of making and specifying the rules governed organic production methods. (Guillou Le Gwenaelle and Scharpe Alberik, 2000, p.5-7).

The council regulation which is a term used for an EU regulation for organic farming in the 1990's which outlined the basic set of rules and regulations for production of organic foods

was framed based on the interest of the consumers in organic foods. This reveals the fact that there was a new social movement, which was that of the consumers, that brought about a change in terms of the perspective of the type of foods that ought to be produced.

The European Commission defines organic farming as:

> **An agricultural system that seeks to provide you, the consumer, with fresh, tasty and authentic food while respecting natural life-cycle systems. (http://ec.europa.eu/agriculture/organic/organic-farming/what-organic_en, n.d).**

Further, according to the European Commission an organic farming system is designed such that it operates in a wholly natural way and that the effects that humans have on the environment is as minimal as possible. This refers to the effort made by an organic agricultural system in reducing the effects of pollution caused by humans. (http://ec.europa.eu/agriculture/organic/organic-farming/what-organic_en, n.d).

The main thrust behind defining organic farming was that it was a natural system of farming, friendly from the perspective of the environment. In addition, it did not encourage the use of pesticides and other chemicals for treating crops with and instead relied on natural methods of production.

The rules and regulations, which defined the organic production methods, were a part of the reform of the Common Agricultural Policy that had succeeded largely in achieving its main goal, which was in making the country self reliant in production of food. Once self sufficiency in food was achieved the focus of the policy shifted towards the environment and

being able to practice farming at the same time blending environmental protection into it. Organic farming was looked at from the perspective of bringing down excessive production of food, being environment friendly and at the same time generating products that could be associated with quality. Organic farming method thus, started gaining importance, which initially in the earlier years was of very slight interest. (Guillou Le Gwenaelle and Scharpe Alberik, 2000, p.5).

The council regulation (which refers to an EU regulation) that came out in 1991 was the beginning for organic farming being officially accepted. It assured consumers of the authenticity of the quality products produced in an organic manner. Further rules that were made in 1992 and 1995 availed the possibility of having a set logo for the organic sector and covered technicalities, which included labelling and importing. (Guillou Le Gwenaelle and Scharpe Alberik, 2000, p.12).

The council regulation on organic production of agricultural products and indications referring thereto-on agricultural products and foodstuffs came about on 24 June 1991 after it was proposed by the Commission and backed by the opinions of the European Parliament and Economic and Social Committee. These regulations were implemented in 1992. The reasons behind this (drawing up of regulations for organic farming) according to the council regulation document 1991 (Council Regulation (EEC) No. 2092/91, 1991, p.3) was that the consumer demand for organic foodstuffs was increasing. This resulted in a new market being created for these food products. The method of production of organic food made use of less land intensive practices and a need was felt to bring about a reorientation of the Common agriculture policy. The reason being that, this method of food production was looked at from the perspectives of helping maintain a good balance between the demand and supply of food

products. Meanwhile, it would be able to aid ecological conservation and help retain the environment of the countryside.

With organic food products coming into the market due to consumer demand according to the council regulation document 1991 (Council Regulation (EEC) No. 2092/91, 1991, 3) the need was felt to have rules and regulations defining the way in which they had been produced (in a non-chemical method). A framework defining rules and regulations governing production, labelling, processing of organic foods was considered necessary to ensure fair methods of production among producers, and to make organic foods more acceptable among consumers by making sure that right from the production stage to the processing stage there were indications about how the organic foods were being handled.

The council regulation 1991 (Council Regulation (EEC) No. 2092/91, 1991, 4) considered organic production methods as a method of production that entailed a variety of methods of growing produce and that avoided the use of synthetic chemicals that may have harmful effects on the environment. The need to have an inspection system to ensure that the organic produce at all stages be it production, marketing or importing met the minimum community requirements was proposed as part of the regulation. (Council Regulation (EEC) No. 2092/91, 1991, p.4)

Council regulation 1991 (EEC) No. 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs looked at protecting the interests of producers and consumers and was able to achieve this. In all countries of the European Union inclusive of the UK, these rules and regulations were implemented. By August 1999, the council regulation made rules for livestock production

under organic farming too. Therefore, the rules and regulations by then covered both plants and livestock production. The rules and regulations also covered labelling and inspection of livestock “covering issues as foodstuffs, disease prevention and veterinary treatments, animal welfare, husbandry practices and the management of manure”. (http://ec.europa.eu/ agriculture/organic/eu-policy/legislation_en#regulation, n.d).

March 2000 was the year in which “Commission introduced with Commission Regulation (EC) No 331/2000 of 17 December 1999 a logo bearing the words 'Organic Farming - EC Control System”. (http://ec.europa.eu/agriculture/organic/eu-policy/legislation_en#regulation, n.d).

Organic farmers could adopt the logo if the production methods and the products that were produced adhered to the Council Regulation (EEC) No. 2092/91. This was in order to facilitate the organic producers better as it was a mark of the credibility of their products and from the consumers perspective this was very critical.

On June 28, 2007, the Agriculture Ministers of the European Union agreed on revising the rules and regulations governing organic production methods revision of Council Regulation (EEC) No 2092/91. The revision was looked at from the perspective of being made much simpler from the consumers and producers points of view. (Official Journal of European Union, 2007, p.1).

In 2007 the Council Regulation EC No. 834/2007 on Organic production and labeling of organic products and repealing regulation (EEC) No. 2092/91defined organic production as:

> **An overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards, and a production method in line with the preference of certain consumers for products produced using natural substances and processes. (Official Journal of European Union, 2007, p.1).**

Organic food production here was seen as performing a twin role. On one hand, it was protecting the environment and taking care of animal welfare while on the other hand it was catering to the consumer demand for foods that were produced in a wholly natural way.

The need to have a framework of organic production rules apart from those for plants and livestock, now extended to aquaculture, and for collection of wild plants and seaweeds. The regulation covered the fact that there was the need for new techniques in order to enhance the development of the organic way of production. Genetically modified organisms or products produced from GMO's were seen as not being compatible with organic production methods and from the consumer's perspective and hence, was excluded from the production and processing of organic foods. The target was to see that organic foods had the lowest amount of GMO content in it. (Official journal of European Union 2007, p.1-2). The EU logo was made compulsory for all organic farm products, which could be followed up with national and private logos. The main stress was on the need to be able to inform the consumers as to the origin of the organic products. (http://ec.europa.eu/agriculture/organic/eu-policy/legislation_en#regulation, n.d).

The use of renewable resources for organic production rather than non- renewable resources was another point made. The recycling of plant and animal by products into the land in order to add to the nutrient of the soil content was covered. Livestock production was regarded as being essential in production of organic crops in so far that they contribute to the inputs in terms of organic matter. This adds to the nutrient content of the soil, improves its quality and plays a role in aiding and abetting the sustainable nature of organic farming. (Official journal of European Union, 2007, p.2). It should, be noted that a 'stock free' or 'vegan' approach would contest the importance of livestock farming to the organic system.

It can be noticed that 'organic farming' went over a transition from the 1990's to the current year. In the beginning organic farming started gaining importance as it was an environmentally friendly method of farming and the focus shifted from increasing self-sufficiency in food production to being able to protect the environment. The focus was on being able to fulfil consumer's needs for foods that were produced in a natural way and organic farming was perceived from the point of view of producing chemical free food. Rules and regulations defining the labelling and processing of organic foods were also set out. Initially the term organic production was used to define only environmental friendly plant production methods but over a period (by 1999), livestock production was also included. In other words, organic farming considered livestock production as being a very important element as long as the livestock contributed towards the sustainability of agriculture.

After discussing the EU rules and regulations on organic farming, the next section discusses the UK legislation on organic farming.

3.3 UK legislation on organic agriculture

"The Action plan to develop Organic food and farming in England" was published in July 2002. This was based on" recommendation in the report from the Policy Commission headed by Sir Don Curry1 that there should be a strategy for organic food production" which would take into consideration the entire food chain. (http://www.defra.gov.uk/farm/organic/policy/actionplan/pdf/actionplan.pdf,_2002).

This organic action plan was "produced by a stakeholder group" and was the first crucial step taken in the direction of addressing the organic sector. This Action Plan represented the "practical measures which the government and the food and farming industry" would take in order to motivate a more sustainable form of farming i.e. organic farming and a more sustainable food sector as well. The objectives of the plan were producer and consumer centric. This involved development of the organic sector based on "consumer demand". In addition, consumer's confidence in organic food and its authenticity was essential. For this, the plan focused on providing "accurate information about the standards" by which organic food was produced. Apart from the consumers, the action plan also was in line with producer's benefits. The organic action plan sought to provide "organic farmers, growers and processors in England with the market information they need to develop their businesses successfully". (http://www.defra.gov.uk/farm/organic/policy/actionplan/pdf/actionplan.pdf, 2002).

Producers being able to get an increased market share in line with consumers demand for organic foods whilst at the same time helping protect the "English countryside" was the fourth objective of the action plan. (http://www.defra.gov.uk/farm/organic/policy/actionplan/pdf/actionplan.pdf, 2002).

"DEFRA, in the year April 2003, established a new Advisory Committee on Organic Food and Farming" which had representation from all parts of the organic food sector like "certifying bodies, organic sector bodies" and bodies representing "wider consumer interests". (http://www.defra.gov.uk/farm/organic/policy/actionplan/pdf/actionplan.pdf, 2002).

In the year 2004, "the Action plan to develop Organic food and farming in England – Two Years On" reported an increase in the proportion of organic food supplied by producers. The Action plan in 2004 concentrated on helping farmers by encouraging them to supply more food that is organic by "including for the first time a payment for the continuation of organic methods in return for environmental undertakings". (http://www.defra.gov.uk/farm/organic/policy/actionplan/pdf/actionplan2year.pdf, 2004).

In the year 2005:

> **All Government departments committed to the UK sustainable development strategy. This long-term plan set ambitious and positive goals. To achieve them, government departments at all levels need to work closely together and with wider society. (http://www.defra.gov.uk/sustainable/index.htm, 2008).**

Then the UK legislation on organic agriculture came about and the and the Compedium of UK organic standards was framed in the year 2006 by Department for Environment Food and Rural Affairs (DEFRA).

The Compendium is the standard for organic food production that must be complied with in the UK. “EU Regulation 2092/91 is the basis for UK organic standards”. (http://www.defra.gov.uk/farm/organic/standards/certbodies/approved.htm, 2008).

The EU regulations have been discussed in detail previously in the chapter. These rules and regulations are implemented under the Organic Products Regulations 2004, through the Compendium of UK Organic Standards. According to the Compendium of UK Organic Standards Organic farming can be defined as follows:

> **Organic production systems are designed to produce optimum quantities of food of high nutritional quality by using management practices which aim to avoid the use of agro-chemical inputs and which minimise damage to the environment and wildlife. (http://www.organic.aber.ac.uk/policy/docs/compendium-sept06.pdf, 2006).**

The UK Compendium for organic agriculture is published by DEFRA on behalf of all Rural Affairs Departments in the UK (Department of Agriculture and Rural Development Northern Ireland, Scottish Executive Environment and Rural Affairs Department and the Welsh Agriculture and Rural Affairs Department).

For particular specified purposes, DEFRA is designated as the competent authority and for others DEFRA acts on behalf of all four Rural Affairs Departments in the UK.

3.4 UK organic certifying bodies

In Britain, after the advent of major food epidemics like E. coli and BSE, the use of intensive agricultural methods of farming were viewed more critically, by the public and organic movement came about because of a critical appraisal of intensive farming in the country. This

debate was of the interests of organic farming given its stress on reduction of pollution and solutions to a better and healthier alternative to farming practices.

There are certifying bodies in the UK that are approved by DEFRA for inspecting and certifying produce that is grown organically. They are:

- ✓ Soil Association
- ✓ The Organic Farmers and Growers Ltd
- ✓ Scottish Organic Producers Association
- ✓ Organic Food Federation
- ✓ Biodynamic Agricultural Association
- ✓ Organic Trust Ltd
- ✓ Irish Organic Farmers and Growers Association
- ✓ Quality Welsh Food Certification Ltd
- ✓ Ascisco Ltd
- ✓ CMi UK

3.4.1 Soil Association

Where organic farming is concerned in the UK, the Soil Association is the leading certifying body for the production of organic foods. The formation of this association dates back to 1946. The ill effects of latest technology spoken about by Wrench (1938) (cited in Reed, 2002, p.10) talks about new technologies that were being used in agricultural production. This was deteriorating the quality of the soil, whilst other worries included the effects of poor quality food on the population's health.

The Soil Association was formed during the organic movement in England against GM technology. It was a "social movement organization". (Reed, 2002, p.3).

Reed says that:

> **The Soil Association set out arguments against GM technology, changed the rules governing organic production and set about mobilizing the movement through its own and other group's informal networks". (Reed, 2002, p.7).**

Talking further about the Soil Association it traces back the origins of organic farming to three different strands. The first was the origin of Biodynamic Agriculture. Rudolf Steiner was the founder and he explained the concept of biodynamic agriculture to a group of farmers in Austria in 1924. In 1927, the lectures that he gave defined Biodynamic agriculture and the Demeter symbol was founded to specify that crops were grown by this method. Secondly, the works of "Sir Albert Howard (on composting and agricultural health) and Sir Robert Mc. Carrison (on diet and human health) in India led to Lady Eve Balfour conducting the Haughley experiment and writing the Living Soil in 1943 which consequently resulted in the formation of the Soil Association in 1946. (Soil Association Organic Standards, 2008, p.39-40). Apart from this, "Hans and Maria Muller together with Hans- Peter Rusch developed a natural approach to farming and soil fertility in Switzerland particularly using rock dusts". (Soil Association Organic Standards, 2008, p.39-40).

In spite of there being apparent dissimilarities, these three strands of thoughts had similarities too which were that the farm was an organism in it's entirety, the fact that the living soil was the determinant of health in the food chain and the concept that the living soil as a whole is

greater than the sum of its parts. Organic farming is here talked of by the Soil Association as making use of and developing "simple traditional agricultural practices." (Soil Association Organic Standards, 2008, p.1).

The Soil Association (2008) defines organic farming as "a way of growing and producing food using methods that are friendlier to the environment" and according to the association:

Where, certification for organic was concerned since 1973 Soil Association Certification Limited (SA Certification) has certified organic farms, organic foods and others. The SA Certification is a subsidiary owned by the Soil Association charity and it has been approved off by DEFRA for organic production as well as processing which comes under the EU Regulation 2092/91. (Soil Association Organic Standards, 2008, p.40).

The Soil Association apart from following the DEFRA standards sets its own set of standards for other organic products. The Soil Association set their own independent organic standards for which they have a board and committees. "The board and committees are made up of our members and licensees, researchers, advisors, other experts in their field, together with independent people and consumer representatives". (http://www.soilassociation.org/web/sa/psweb.nsf/A2/index.html, n.d).

Policy decisions made by the soil association is based on the group performance in decision making by these board and committees which are set out for Agriculture, Aquaculture, Ethical trade, Food processing, Forestry, products, Horticulture and Textiles. The Soil Association apart from meeting the minimum requirements of the government where organic standards are concerned has also set its own standards. For instance, standards for shops,

retailers, restaurants, bars and cafés, health and beauty products, clothing and textiles, gardening products like composts, timber and wood products and ethical trade. (http://www.soilassociation.org/web/sa/psweb.nsf/A2/index.html, n.d).

Thus, where organic farming certification was involved it initially covered only certification of foods and livestock (EU standards). Then gradually, the standards for certification have also extended to other domains like cafes, health and beauty products, textiles etc. Organic is not only restricted to producing environment friendly food, but has also extended itself to other areas like Aquaculture, Ethical trade, Food processing, Forestry, products, Horticulture and Textile reflecting high-end technology in organic farming practices (certification in this specific instance).

The Soil Association certifies around 75% - 80% of organic produce in the UK. over 80% of organic products in Britain carry the Soil Association symbol that can be found over 50, 0000 organic products and ingredients, a figure that is rapidly increasing everyday. (Personal communication through e-mail with Clio Turton on 12/05/08).

3.3.2 Organic Farmers and Growers Ltd

The Organic Farmers and Growers Ltd is another leading certification body for organic foods, accredited by DEFRA, approved to inspect organic production and processing in the UK (Organic farmers and Growers Ltd, 2008). The Organic Farmers and Growers account for certification of around 40-45% of all UK organic dairy farmers. Around 60% of all UK organic poultry, which are rough estimates, based on the knowledge of the market place also in terms of organic licensing it is the second largest organic certification body in the UK. (Personal communication through e-mail with Richard Jacobs on 08/05/08).

The difference between the Soil Association and this organization is that the Soil Association has its own standards where organic is concerned apart from meeting the minimum government requirements for organic production. On the other hand, the Organic Farmers and Growers Ltd. comply by the EU regulations and requirements for organic production and they are approved of by DEFRA.

Organic Farmers and Growers Ltd perceive organic farming as a combination of both traditional methods and latest scientific technology in agricultural practices to ensure that there is a sustainable future. (http://www.organicfarmers.org.uk/aboutorganics /organic_farming.php, 2008).

According to the Organic Farmers and Growers organic systems are good for reasons like sustainability, animal welfare, health reasons, proving opportunities to farmers and growers to make profits without intermediaries as they sell directly to producers through at local markets and through box schemes. This empowers the farmers and creates awareness among the people about the type of farming and food. The terms modernity and scientific research technology that have been used to define the practice of organic farming can be associated EM.

3.3.3 Scottish Organic Producers Association

SOPA, which is Scotland,'s leading certifying body accounts for 80% of the organic certification with respect to organic producers and processors. The Scottish Organic Producers Association Ltd was incorporated as a company in June 1988 under the Industrial and Provident Societies Act, number (SOPA) SP02278R.

SOPA says that:

> **Organic production systems are designed to produce optimum quantities of food of high nutritional quality by using management practices which aim to avoid the use of agro-chemical inputs and which minimize damage to the environment and wildlife. (http://www.sopa.org.uk/ orgfarm.php,n.d).**

SOPA further says that organic systems entail something that is equivalent to being "traditional and environment friendly" (SOPA) and further that the word organic should comply with the EU regulations. SOPA, seems to be of the opinion unlike some of the other organic certifying bodies and organizations in the UK that organic is something that relates to tradition, something of the past and it also signifies the importance of environmental protection.

According to Deborah Roberts - Development officer, Scottish Organic Producers Association (personal communication through e-mail on 05/07/08) of the SAC Organic Market Link Survey of organic produce in Scotland for 2007-8 SOPA certifies the following:

Type of Organic food	**Percentage certified in Scotland**
Prime Lamb	80%
Store Lamb	70%
Prime cattle	75%
Store cattle	82%
Feed wheat	70%
Milling wheat	81%
Feed Barley	73%

Malting barley	100%
Oats	78%
Triticale	98.5%
Feed beans	87%

SOPA seems to account for a major percentage of certified organic produce in Scotland.

3.3.4 Organic Food Federation

The Organic Food Federation came into existence in 1986. It was officially approved in UK as a certification body for organic produce and was formed to aid a group of organic manufacturers. The standards set by the Organic Food Federation comply with EU 2092/91 rules and regulations. (http://www.orgfoodfed.com/About%20Us.htm, n.d).

The certification rules of the Organic Food Federation comply with the EU rules for organic production rules and regulations EC 2092/91. The Organic Food Federation standards are based on the DEFRA standards (same as EU standards) (EC 2092/91). This is officially the standard set for organic production. According to the organic standard set by the organic food federation a substance can only get the organic status if it has 95% or more, organic agricultural ingredients (Organic Food Federation). In addition, the organic food federation has developed Aquaculture and Personal Care Standards and will be introducing standards for other specialized products. (http://www.orgfoodfed.com/Our%20Standards.htm, n.d).

The Organic Food Federation has ventured into developing certification standards for aquaculture specifically development of private standards for codfish now officially recognized by DEFRA apart from organic foods. In addition to cod certification, it also

offers specific standards for bivalve molluscs and salmonids. The stress on organic aquaculture is in order to try to create a sustainable source of fish for human consumption, instead of letting the wild fish numbers dwindle because of fishing on a larger commercial level. (http://www.orgfoodfed.com/Our%20Standards.htm, n.d).

This indicates that the Organic Food Federation is another certifying body in the UK that has ventured into certification of aquaculture in order to ensure ample availability of aqua species for human consumption purposes. Organic production as pointed out earlier on the chapter is no more restricted to only food crops. Technology and scientific practices are the driving forces here. However, there are no records of figures as to how much of organic food in the UK the Organic Food Federation certifies. (Personal communication through e-mail with Vivien McBride on 06/05/08).

3.3.5 Organic Trust Ltd

The Organic Trust Ltd "was founded in Ireland in 1991 by a core of dedicated organic producers including some of the pioneers of organic production in Ireland". (http://www.organic-trust.org/about/,n.d). It was formed in order inspect and certify organic produce and was a voluntary non- profit organization. The main aim of this organization is to see that organic food is what it is supposed to be which means that it is authentic and also that foods that carry the organic trust logo relate to high organic standards that have been followed so as to ensure that it can be depended upon by consumers. (http://www.organic-trust.org/about/, n.d). The Organic Trust Ltd. is regulated by DEFRA. It certifies organic produce in the UK (through certification code UK9). The standards are as per the EU regulations.

The perception of organic farming as per the Organic Trust Ltd is that it is:

> **A very sophisticated and elaborate system of food production- all designed to produce food naturally and to ensure that potentially hazardous synthetic chemicals are kept out of the food chain. (http://www.organic-trust.org/about/, n.d).**

Organic production here has been defined as elaborate and sophisticated, which are terms that go with modernity, scientific know how and technology.

Organic food is conceived by the Organic Food Federation as being of superior quality with good flavour and nutritional content. Producing food of organic nature is of significance. Being able to maintain these aspects (quality, flavour and nutritional content) of foods produced organically combined with the need to take care of the environment as well as protect animal welfare is what rules and regulations have been developed for according to the Organic Trust Ltd.

According to Helen Scully, National Coordinator and Certification Manager, Organic Trust Ltd. (Personal communication through email on 06/05/08) up to date they have 17 members in Northern Ireland. Though they account for the bulk of marketing for the Irish organic produce, they certify a very miniscule portion of the organic produce in UK, which accounts to less than half percent.

3.3.6 CMi UK

CMi UK is another DEFRA accredited certifying body in the UK. CMi UK is of the opinion that increasingly today consumers are becoming more conscious of their duties and

responsibilities towards the society. In order to suit these needs it is very important for businesses to be done in an ethical manner so that businesses and their product ranges can expand in the market and grow (CMi, 2008). CMi claims to both aid farmers in their business operations as well as takes care of consumer satisfaction needs. It "provides advice on customer and market requirements, technical consulting, training and certification to farmers and agricultural businesses". (http://www.cmi-plc.com/en/sector.php?scr=27, 2008).
This goes to show that certifying bodies like CMi use modern technology for certification purposes. Orientation towards societal needs using technology and capitalizing on it is reflected.

The chapter does not elaborate on the remaining certification bodies for the following reasons:

In the case of the **Biodynamic Agricultural Association**, they are mainly into certifying produce that is grown bio-dynamically. Biodynamic agriculture is different from organic in that, the compost used is treated with special herb-based preparations. The inputs used for production are kept at a minimal level and natural manure and quartz-based preparations are used to enhance the quality of the plants. The most important point that clearly distinguishes biodynamic from organic agriculture is the fact that astronomy plays a very important role in the agricultural practice in that an astronomical calendar is used to determine auspicious, planting, cultivating and harvesting times (www.biodynamic.org.uk, n.d). Biodynamic farming is the main thrust of this organization. This association is involved in promoting and supporting biodynamic agriculture.

The Biodynamic Agricultural association argues that:

> **This unique form of organic husbandry is inspired by the research of Rudolf Steiner (1861-1925) and is founded on a holistic and spiritual understanding of nature and the human being. (www.biodynamic.org.uk, n.d).**

According to the manager of the Demeter certification scheme for biodynamic production in the UK, BDAA collects information on land area, livestock numbers, etc but do not collect data on the amount of organic food produced by their members (producers). BDAA certify 140 farmers and growers in the UK and 84 processors. BDAA certify 81 processors, 2 importers, and 1 distributor in the UK. Total area of BDAA certified land is 4893 ha - including fully organic certified land and land in conversion to organic. (Personal communication through e-mail with Tim Green on 02/07/08).

Biodynamic agriculture in comparison to organic farming is perceives as a form of agriculture that represents tradition like astronomy and spirituality, which varies from what organic agriculture represents today, in terms of modernity and technology. This reflects the fact that biodynamic agriculture, which like organic agriculture is a form of environment friendly farming, is different from it in that it does not reflect EM.

Irish Organic Farmers and Growers Association certifies organic produce, which is sold mainly in Ireland and not as such in the UK according to Angela Clarke certification Manager. (Personal communication through email on 27/06/08).

Quality Welsh Food Certification Ltd was set up in Wales by the Agricultural co-operative movement against standards set up. Unlike the other organic certifying bodies, this seems to have a restricted applicability in the case of organic produce mainly in Wales, which is why it would not be significant to go into detail about it in the chapter.

Ascisco Ltd was started by the Soil Association in the year 2003 for those organic producers who could meet the minimum UK standards. These were for producers who were not able to fulfill the complete Soil Association standards. (Ascisco Ltd, 2008). The Soil Association has already been discussed about in detail, as one of the major certifying bodies for organic produce in UK. Therefore, Ascisco Ltd has not been discussed in detail in this chapter.

3.4 Conclusion

Ecological Modernisation is reflected in organic farming practices in the UK. The rules, regulations and policies on organic farming too reflect the influence that EM has had on them. The extent to which EM may have influences on organic farming practices will be examined for a developing country like India (Karnataka) in chapter 4 of the thesis

Organic farming in the UK gained importance towards the end of 1960's when food scares brought into focus the need to protect the environment. Organic farming received importance from the government as well as consumers who sought foods that were of high quality and naturally produced. The first set of EU council rules and regulations defining the way in which organic production ought to be carried out came out in 1991, initially only plant production was covered, over a period of time livestock was also considered crucial for an organic farming system for which again standards were set by 1999, apart from this labelling. Rules and regulations defining the import of organic produce and logo's for organic produce

were also considered important. The use of Logo's on organically produces food products was considered as vital from the perspective of satisfying the consumers as to the authenticity of the produce. The nature of organic farming has changed to incorporate new technologies such as aquaculture, new concerns such as animal welfare and a raft of techniques required for mass marketing of products. The UK compendium of Organic standards is what defines rules and regulations surrounding organic farming in Britain. These standards, that are developed by DEFRA follows the EU regulation 2092/91.

Organic farming has been defined in different ways by different organizations in the UK like the Soil Association, Organic Research Centre, Organic farmers and growers association, Organic Trust, SOPA, Organic Food Federation and CMi. Apart from a minority of definitions by a few authors, it is the case that though there is a variation in the perspective as to what organic farming is about, generally the social, economic and technological aspect of organic farming, including its incorporation in the growing economy and benefits for the environment are stressed. Hence, EM theory is very relevant here and the organic food industry is deeply imbued with EM ideas. In UK, The Soil Association and SOPA both seem to account for a major chunk of certification followed by the Organic Farmers and Growers Ltd.

The definitions of organic farming and the rules and regulations surrounding it seem to have a lot of influence from the theory of Ecological Modernisation. Organic farming recognizes the need to protect the environment and at the same time is a booming business today, which reflects EM in organic farming practices in the UK.

Organic farming is under the influence of bureaucracy, which involves stringent certification measures, which are necessary to make it available for the masses. For example the Soil Association in the UK, is well recognized through the brand name that it has created for itself. Major retail outlets in the UK for marketing organic products use this. Bureaucracy is very essential in terms of the credentials of an organic product and its marketability. Bureaucracy includes sales of organic foods. Bureaucracy is interlinked to economic development, which reflects the fact that there is a relationship between bureaucracy and Ecological Modernisation. Whether EM also influences organic farming in India (Karnataka) is what the Chapter 4 is going to explain.

CHAPTER 4

ORGANIC FARMING IN INDIA

The main intention of the chapter of the thesis is to see if Ecological Modernisation has influenced organic farming practices in India. This would be especially interesting from the point of view of a developing country like India, where farming is associated with the tradition, culture and way of life of people here.

The chapter begins by discussing organic farming in the context of India. After a general background on organic farming in India, the chapter moves on to introduce the origin of the Green Revolution in the country thus also describing the reasons as to why an agricultural revolution was sought after in the country and what advantages as well as repercussions the green revolution had in India. Next, the various perceptions of organic farming in India have been discussed and similarities/ differences from the way it is viewed in the UK have been mentioned. This in turn has been related to Ecological Modernisation.

After this, the thesis moves on to talk about the organization of the various bodies at the National level that play important roles where organic farming was concerned in the country. The thesis mainly focuses on the official rules and regulations set out for organic farming in the state of Karnataka and the reason/reasons behind choosing the state of Karnataka have also been discussed in the chapter.

The State government policies in Karnataka for organic farming have been talked bout in this chapter from the years 2004-2008. Apart from the government's interest in promoting organic farming in the state of Karnataka and farmers groups participating in promoting

organic farming too has been cited to signify the relevance of organic farming in the state today and in this context group certification has been defined and discussed in this part of the chapter. Next, the thesis goes on to mention the accredited certification bodies responsible for organic food certification and inspection in India.

A detailed explanation of Ecological Modernisation has already been given in chapter 2. Talking about organic farming in India unlike in Britain was practiced for decades and was part of the traditional agricultural practice in India. It was something that was passed down from one generation of farmers in the country to the next. Producers in the country were using organic methods of cultivation until the mid 1950's. After this the green revolution was introduced in India and it marked the achievement of the nation in terms of the food grain production capacity where in India became self sufficient in terms of food availability. However, this challenged the nature of this type of agricultural practice, which in terms of sustainability posed a question. Thus, the need arose to find an alternative sustainable form of agriculture that took care of the health of the soil, humans and plants and at the same time was environment friendly. Organic farming seemed to be a viable option from the perspective of a sustainable option. (Bhattacharyya and Chakraborty, 2005, p.115).

Organic farming in India has been practiced for a very long time, over decades. According to Brook and Gaurav Bhagat (2004), India's farmers are still practicing organic agriculture that has been passed down over the times. Brook and Gaurav Bhagat talk about how in India organic farming continues to be a practiced by default. (Bhagat and Bhagat, 2004).

The reasons stated for this are that the producers located in the Eastern and North-eastern regions of the country are forced to farm organically. They forego the use of fertilizers and

pesticides. The reason is that they have no other alternative and the fact that since organic agriculture has been practiced for decades in India and passed down from one generation to the other. Most producers choose to practice organically (Bhagat and Bhagat, 2004).

This reveals the fact that organic farming is part of the tradition and culture in India. It is not borne out of strictly environmental concerns in the country though this may be also a reason for organic farming practices being revived in the country. It can be said that prior to the Green revolution era in India farming practices in India were environment friendly and organic in nature as chemicals were not being used in agriculture.

4.1 Green Revolution

It would be interesting now to look at how organic farming, which was an immanent part of the agricultural scenario in India, was swept to the background and was replaced by intensive farming methods instead. Before the green revolution the traditional agricultural practices in India was devoid of any chemicals and organic in nature. However, because of food grain shortages in the country, in the 1960's India was looking for a way to increase its food grain production. Food crisis in India aggravated the problem and the country did not have any reserve store of food grain supply, and the productivity of food grains was low too. India was able to meet its food grain requirement by imports. The amount of food grains that were produced in the country stood at 50 million tonnes and a solution for the clear increase of food grain production was sought after. (http://www.goodnewsindia.com/Pages/content/milestones/greenRev.html, 2002).

The Green revolution in India was the solution that changed the country's history of low food grain production. This was the period during which traditionally practiced agriculture in India, was challenged by a more chemically intensive form of agriculture better known as the 'Green Revolution'. This was a term that was coined in the 1960's to highlight a breakthrough that was discovered in plots that were put to test in northwest Mexico. Hybrid, tested varieties of wheat that responded to irrigation and the use of fertilizers produced higher yeilds than did the traditional varieties of wheat. This gave space for the increasing food grain production by means of using inputs that were industrial in nature. The Rockefeller and Ford Foundations acted as catalysts in bringing about changes in the productivity of food grains like rice and corn in Asia through the development of hybrid, modern varieties. (http://www.foodfirst.org/media/opeds/2000/4-greenrev.html, 1998). Green revolution was offset by the fact that the new varieties of seeds needed irrigation apart from chemicals in the form of fertilizers and pesticides. The immeditae effect was that:

> **This form of agriculture replaced the traditional farming practices of millions of Third World farmers..By the 1990s, almost 75 percent of Asian rice areas were sown with these new varieties. (http://www.foodfirst.org/ media/ opeds/2000/4-greenrev.html, 1998).**

The key actors in India who played a significant role in the green revolution were the then union minister for agriculture C.Subramaniam, B.P Pal and M.S Swaminathan a well reputed home-grown plant genetist. Apart from these important contributors to the green revolution Norman Borlaug an American Agronomist, was the main steering force in bringing about the green revolution in India. India discovered Borlaug and the Norin dwarf strain of wheat, which made it possible to unleash the green revolution. (http://www.goodnewsindia.com/ Pages/content/milestones/greenRev.html, 2002).

According to Kesavan and Swaminathan:

> **William Gaud coined the term 'green revolution' in 1968 to describe the enhanced photosynthetic activity of the green pigment, chlorophyll leading to more grain production. (Kesavan and Swaminathan, 2006, p.145).**

The food grain production in India after the green revolution rose to 131 million tons in 1978-79 in India (Ganguly 2008). This reflects the fact that the green revolution brought about a substantial elevation in the food grain production from 50 million tones in the 60's to almost thrice its original quantity in the 70's and 80's.

Apart from the quantum leap that was seen in the food grain production there also seems to be social benefits that were linked with the green revolution. The Green revolution was linked up with the intensive use of chemicals, fertilizers, fungicides, along with the need for irrigation facilities. This in turn resulted in the development of the units that manufactured these products locally and that led to the growth of these sectors, which created a growth in the industrial environment leading to the availability of more number of jobs in the industrial sector, resulting finally in a contribution towards the GDP of India. (Ganguly, 2008).

In addition to the social implications of the green revolution, there were political results as well. In the sense that India now being very self sufficient in food grain production started exporting food grains to other countries and this resulted in India growing in terms of being able to demonstrate its capability of self sufficiency to other nations and thus in the process winning the admiration of countries i.e. third world countries. (Ganguly, 2008). This reveals the fact that the green revolution brought along with it changes in various aspects in the

country in terms of social, economic and political changes, but this was not in keeping with the environment protection.

After looking at the benefits of the green revolution in India, it would be useful to discuss the impact of the revolution as a whole on the country, which can be done by also looking at the consequences that the nation had to bear because of the green revolution. This could be used in order to examine the effects of the green revolution in the country and see if this could be the reason as to why organic farming regained importance as an alternative form of agricultural practice in India.

The green revolution in India that led to intensive agricultural practices in the country had its implications and negative impacts some of which have lasted to this day. The ill effects and negative consequences that the green revolution had on the country can be listed as follows:

a) Continued and long-term dependence on the chemical farming method, which involved the use of chemicals and fertilizers that substituted organic and naturally produced ones led to growing dependence on more quantities of these chemicals. (http://www.organicfacts.net/organic-cultivation/organic-farming/organic-farming-in-india.html, 2006).
b) Increased use of chemicals led to pests and diseases developing resistance to these chemicals for which the producers are left with the resort of using more chemicals that are stronger by nature. (http://www.organicfacts.net/organic-cultivation/organic-farming/organic-farming-in-india.html, 2006).
c) Thirdly, in India, there are financial constraints that producers face and the need to use extra amounts of chemicals for production of food grains leads to producers in the

country dependent on the goodwill of moneylenders. This causes them to get into situations where they have debts to pay off and when they are unable to find solutions to pay off the debt it leads to farmers committing suicides in the country. (http://www.organicfacts.net/organic-cultivation/organic-farming/organic-farming-in-india.html, 2006).

d) Apart from the harmful effects, that intensive use of fertilizer has had over the environment as mentioned afore in the chapter, the soil quality in terms of its fertility had degraded largely. The chemical form of farming also calls for extensive use of power and irrigation facilities that is unaffordable by all farmers and the continued requirement for this has had its effects on the producers of the country financially. In other words, chemical farming is capital intensive and only producers who are rich enough to be able to afford the costs involved benefit from it.

e) The green revolution was restricted to only food grain production that was in huge quantities and did not cover other agricultural produce. In addition, the green revolution showed optimum results only in certain parts of the country like Punjab and Haryana more than in other states of the country. (Ganguly 2008).

f) The worst effect of green revolution that can be cited is the inappropriate use and extensive use of fertilizers and pesticides that have led to disastrous consequences like pollution of the soil, water, dwindling wildlife and contributing to health hazards in humans. Irrigation being very important in intensive farming practices.

g) Concentration on increasing yields of food grains (cereals) in particular led to decrease in the rate of biodiversity as increasing the yield of other foods were not given equal priority. (http://www.ifpri.org/pubs/ib/ib11.pdf, 2002).

h) Green revolution has led to a lot of over use of water whether it is surface water or ground water. Water resources have depleted with the onset of the green revolution. (http://www.kashambuzi.com/blog/18.html?task=view, 2007).

i) Mixed cropping has been effected since the time of the green revolution and this has led to the genetic diversity being affected which "offered protection against the vagaries of disease and weather". (http://www.kashambuzi.com/blog/ 18.html?task=view, 2007).

j) The practice of intensive agriculture for the very first time in the country resulted in masses of producers who were largely illiterate making use of modern techniques in farming. This was done without any kind of training or assistance, also insufficient supply of water for irrigation facilities and "input pricing and subsidy policies that made modern inputs too cheap and encouraged excessive use". That led to deterioration of the environment. (http://www.ifpri.org/pubs/ib/ib11.pdf, 2002).

It can be said that the responses to the green revolution initially were positive as it led to increase for food production substantially. However, over a period it evoked a lot of criticism from people in the country because of the repercussions that it led to as has already been discussed in detail previously. In fact, it can be said that the green revolution was the starting point for the deterioration in the environmental conditions in the country and that was when intensive farming took over traditional organic practices in the country.

4.2 Effects of Green revolution on different sectors

Where the agricultural sector in India was concerned, the green revolution had a tremendous effect. As discussed earlier, the productivity level of food grains shot up in the country and

India became very self-sufficient in terms of food grain production and stopped importing food grains from other countries.

India's economy did better after the green revolution. India returned loans that it had borrowed "from the World bank and its affiliates for the purpose of the Green Revolution". (http://www.indiaonestop.com/Greenrevolution.htm, n.d).

Apart from the agricultural sector, the green revolution also had an effect on the industrial sector in the sense that it helped create jobs in the industrial sector. The need for irrigation led to the need to have more number of dams to store water, which in turn was converted to hydroelectricity. This led to the improvement of the quality of the lives of people, especially rural people living in villages because of the increase in employment opportunities. In terms of results that arose politically in India as an outcome of the green revolution India instead of importing food started exporting it .This helped bolster India's image and earned admiration for the country from other third world countries. (http://www.indiaonestop.com/ Greenrevolution.htm, n.d).

In terms of technology, the agricultural practices in pre- green revolution India did not make use of modern agricultural practices as previously mentioned in the chapter. However, with the advent of the green revolution in India, Modernisation took over agriculture and technology was an imminent part of agricultural practices. This article by the Fao talks about how the green revolution though it was very beneficiary for the more wealthy people it led to rural women incurring higher costs. (http://www.fao.org/focus/e/women/green-e.htm , n.d).

The following has been cited by FAO:

> **Studies on the impact of the Green Revolution have shown that technological change can generate major social benefits but at the same time generate significant costs for particular categories of rural women that are different in kind and in intensity from those experienced by men. (http://www.fao.org/focus/e/women/green-e.htm, n.d).**

Though agriculture was revolutionized using technology and this created job opportunities for labour in agriculture, the wages remained the same or reduced on account of an overflow of agricultural labourers. Therefore, in spite of jobs available in the agricultural sector, this did not necessarily improve the quality of people's lives in villages. Most of all rural women were underpaid in the agricultural sector and had heavier tasks like weeding, transplanting etc: to do than did the men. (http://www.fao.org/focus/e/women/green-e.htm, n.d)

In the context of the Green revolution it is necessary to point out the fact that Green revolution is different from EM in that though it is an implication of representing a modern notion it is not environment friendly or sustainable for that matter. Green revolution technology was adopted in India during the time of an acute food shortage. This may have seemed then to qualify as a way of sustainable development in the country. This was a plausible notion that was then generated. This being different to EM the difference being that unlike in the case of EM which is for highly industrialized nations sustainable development stresses on giving high priority to first being able to meet the very essential human needs. The objective of sustainable development as discussed in chapter 2 lies in the ability of present generations being able to pursue their own goals and objectives without neglecting the ability of generations in the future to meet their needs. In the concept of sustainable

development however, the ‘sustainable’ part was what was missing with the advent of green revolution in agricultural practices in the country. This point being highlighted by the fact that though food grain production increased in the country rapidly this was at the cost of the environment taking a beating.

4.3 Organics and Ecological alternatives

After talking about the green revolution in detail, let us look at what kind of plausible solutions/alternatives could be thought of to combat environmental degradation in the country, thus putting forth ecologically sound practices to the forefront. According to Shiva (2008), industrial agriculture has been given a lot of importance and subsidies have been attached to this form of agriculture though the impact on the environment has been negative. In this form of agriculture, which is capital intensive the consumption of inputs are more than the outputs received.

Industrial agriculture and genetically produced food is promoted because it increases productivity, which is useful for feeding the growing population in the country. However, looking in terms of resourcefulness productivity should mean being able to feed more people with the available resources. Therefore, in terms of productivity it is the resource productivity that should be taken into account and not productivity in terms of labour that should be considered as in terms of labour there are no limits set. Productivity measured in industrial agriculture does not consider all the inputs involved as mentioned above, and does not take into consideration all the outputs too. (Shiva, n.d).

Industrial agriculture does not seem to be as efficient in terms of its productivity as per its claims. In fact, resource utilization seems to be poor in this form of agriculture. An ecological

transition in agriculture according to Shiva (2008) could make optimum utilization of resources and increase the quantity of food production. Shiva (2008), talks about organic agriculture being a better alternative to industrial farming. She says that organic farming is what constitutes" the real green revolution" and it is taking place in India on the farms of producers.

She goes on to say that:

> **These small-farmer centered, ecologically sustainable initiatives need scaling up to protect the environment, protect the land and livelihoods of small farmers, and produce more food. Organic agriculture does not merely produce more food at lower financial and ecological costs, it produces healthier, more nutritious, better quality food (Shiva, n.d).**

Here, it can be seen that industrial agriculture in India, does not seem to be resource productive, which organic agriculture seems to do.

Apart from this sustainable perspective to organic agriculture that has been presented there is also another view that can be cited. Kesavan and Swaminathan (2006) talk about the outcome of the green revolution which pointed out to the fact that increased yields ought to be in keeping with the protection and enhancement of the conditions of soil, water, air, should be in keeping with protection/conservation of renewable sources of energy and biodiversity. (Kesavan and Swaminathan, 2006, p.145).

The concept of 'Evergreen revolution' is suggested by Dr. MS Swaminathan noted agricultural scientist and architect of the Green Revolution.

The evergreen revolution is defined as:

> **A system of agriculture that involves sustainable management of natural resources and progressive enhancement of soil quality, biodiversity and productivity. (Swaminathan, 2006,** p.**145).**

Ever green revolution can be brought about in farming systems with the resources that are already available in terms of soil, water, renewable sources and there can be an increase in productivity, which does not have to occur at the cost of the environment. It does not have to affect the environment or the society. (Kesavan and Swaminathan, 2006, p.145).

In the context of moving from the green revolution the ever green revolution, several approaches to achieve it have been put forth one of which is organic farming and other being methods that employ a mixture of different levels of traditional practices along with modern scientific methods. (Kesavan and Swaminathan, 2006, p.146). Swaminathan is of the opinion that the evergreen revolution can be unleashed in the country through driving forces like "organic farming and ever-green agriculture". (Ammannaya, 2008). The mixtures of a traditional know how of farming and combining it with scientific methods of practice seems to be important if the evergreen revolution has to be unleashed in India.

It is interesting to note that the ever green revolution that Dr. M S Swaminathan talks about refers to a new approach to organic farming practices in which organic farming methods are visualized in the light of modern agricultural practices that combine scientific knowledge and protection of the environment as key to practicing sustainable agriculture. Apart from this fact, it can also be said that there are certain similarities that EM has with the concept of the

evergreen revolution. Both the concepts proposed talk about the use of technology and modern scientific methods in protecting the environment and thus ensuring sustainability. However, there are differences underlying these two concepts. On one hand, EM talks about technology and modem science being driving factors behind ensuring sustainability on one hand and achieving environmental protection on the other. By contrast, ever green revolution talks about combining inherent traditional agricultural practices along with modern scientific methods of production. Sustainability and increase in yields is spoken about, but this does not seem to be related to the reaping economic benefits.

After talking about how organic farming is visualized as a means of promoting more environment friendly methods of agriculture, that has the ability of leading to a more sustainable form of food sustenance, it would be necessary to elaborate some of the ways in which organic farming is perceived in India.

Shiva (2008), talks about organic farming in the context of industrial agriculture. She says that organic agriculture is a means of addressing needs like rural poverty in India apart from producing food that is healthy, nutritious and tasty. (Shiva, n.d).

According to Shiva (2008), organic farming is perceived to be a part of the already existing tradition in India that was present sometime back, before the green revolution was launched in the country. It is associated in India as the backbone of the traditional rural farming community, is perceived as a way of helping address their needs and achieves sustainability as well as protecting the environment.

India has been an agrarian society since it was founded a lot longer than decades and agriculture being a very important part of the country has made use of natural inputs for production of food for a very long time. In other words, until the onset of the green revolution in the 1960's India's agricultural system was entirely natural in nature.

> **Organic farming was the backbone of the Indian economy and cow was worshipped (and is still done so) as a God. The cow, not only provided milk, but also provided dung, which was used as fertilizers. (http://www.organicfacts.net/organic-cultivation/organic-farming/organic-farming-in-india.html, 2006).**

Here, there is yet once more the emphasis on the fact that organic farming has strong Indian roots and is a very important part of the Indian society. In addition, livestock (cows) and natural inputs were a prominent part of the agricultural practice system in India.

Nandy (1997), talks about his experience in using an alternative to the modern method of farming. According to him, a single cow can act as a source of two tonnes of manure and 8000cuft of gas per annum. This is significant in terms of both income generation and protection to the environment. (Nandy, 1997, p.25).

Here, the term 'modern farming' is used in opposition to organic farming methods. This could possibly signify the fact that organic farming methods are not considered modern or scientific in nature rather they maybe looked upon as something traditional and natural. The mention of the cow serving a useful purpose as a source of organic input apart from the fact

that in the Indian society the cow is worshipped and is a part of the Indian society and culture according to Nandy (1997), further illustrates the traditional roots of organic farming in India. In India, the key differences between traditional farming and organic farming is that organic farming is done as part of trade and evolves more from subsistence farming to commercial farming. In order to ensure consumer rights the state/its licensed institutions need to regulate it and standardise it. Bureaucracy comes into picture here in the form of certification. Trade and commercialisation add up to economic development, thus directly relating bureaucracy of organic foods to economic development .In Europe, what started as commercial trade in organic production had an EU legislation mechanism to regulate it.

4.4 National Agricultural Policy

Before going on to talking about the organic farming policy for the state of Karnataka, the thesis discusses the National agricultural policy. The period before the green revolution which "witnessed tremendous agrarian reforms, institutional changes and development of major irrigation projects"? (http://www.iegindia.org/dis_rc_85.pdf, n.d).

Expansion of area was the main source of growth in the pre green revolution period. The period of the green revolution saw a reduction in the growth rate of the area. Increasing productivity during the green revolution period was the focus. During the 1960's India was facing a food crisis, with shortage in production, political pressure and economic uncertainty Technological breakthrough in Rice and Wheat, helped increase productivity levels and brought about the Green revolution. (http://www.iegindia.org/dis_rc_85.pdf, n.d).

The second phase of the agricultural policy consisted of the government encouraging the using of hybrid varieties of seeds along with fertilizers. This marked the second phase of

agriculture policy in the country, which was rapid increase in production of food grains. This strategy produced quick results, as there was quantum jump in yield. Consequently, wheat and rice production in a short span of 6 years between 1965/66 and 1971/72 witnessed an increase of 30 million tonnes, which is 168 percent higher than the achievement of 15 years following 1950/51.

The Green revolution brought with it many changes in the agrarian economy. The agro input industry prospered in India, while agriculture reforms took a backseat. “Two very important institutions, namely Food Corporation of India and Agricultural Prices Commission, were created”. (http://www.iegindia.org/dis_rc_85.pdf, n.d). These two institutions were founded from the perspective of firstly, making sure that producers got good prices for their produce, making sure that consumers continued to get these produce at a fair price and lastly, to have a “buffer stock” to protect against extreme impact on yearly “ fluctuations in output on price stability”. (http://www.iegindia.org/dis_rc_85.pdf, n.d).

After this period, next in the 1980’s the agricultural policy had no real direction to it. Growth of agriculture went hand in hand with increase of income generated on the farm and this attracted the attention of various “interest groups and lobbies” which had an effect on the agricultural policy of the nation. There was a lot of “increase in subsidies and support to the agriculture sector”. (Mishra & Chand 1995, Chand 2001) cited in http://www.iegindia.org/dis_rc_85.pdf, n.d. Apart from agriculture the rural economy diversified into other allied activities like “milk, fishery, poultry, vegetables, fruits etc which accelerated growth in agricultural GDP during the 1980s.” (http://www.iegindia.org/ dis_rc_85.pdf, n.d).

The year 1991 brought with it new changes that started an entirely new period for the agricultural policy in India. Where “economic reforms” in the country were concerned there was deregulation, reduced government participation in economic activities, and liberalization. (http://www.iegindia.org/dis_rc_85.pdf, n.d). The “International trade accord and WTO” which came about in India led to the requirement for markets in the country to open up to trade. These new changes in the economic called for the need to have an agricultural policy that would lead the agriculture sector forward. This brought about the New Agricultural policy that was formulated by the Government of India in July 2000. (http://www.iegindia.org/dis_rc_85.pdf, n.d).

“The National Agricultural Policy (NAP) document aims to attain output growth rate in excess of 4 percent per annum in agriculture sector”. (http://www.iegindia.org/dis_rc_85.pdf, n.d). The basis of this is complete and full use of “resources”. The “policy alternatives” are under the following categories:

> **Sustainable agriculture, Food and nutrition security, Generation and transfer of technology, Inputs management, Incentive for agriculture, Investment in agriculture, Institutional structure and Risk management. (http://www.iegindia.org/dis_rc_85.pdf, n.d).**

Therefore, it can be seen that where the agriculture sector in India was concerned, it underwent a major transition from the pre- green revolution period until the year 2000 where the National Agricultural policy was framed which took into consideration the aspect of sustainability in agriculture.

Now, the thesis moves on to describe the organization of the various bodies at the National level that would play important roles where organic farming was concerned in the country. Organic agriculture came to the forefront again in India after the era of the Green revolution. The beginning was in 2000 when from the organic stand point of view in India, significant events took place. They can be listed as follows:

1) "A planning commission constituted a steering group on agriculture who identified organic farming as a national challenge". (Bhattacharyya and Chakraborty, 2005, p.118). The focus was on concentrating on organic farming as a national challenge and taking into consideration as a main area that needed attention under the 10^{th} year plan in the country. The ideas that were put forth by the group comprised of paying attention to the" north east regions in the country, rain fed areas and areas where consumption of agro chemicals is low or negligible". (Bhattacharyya and Chakraborty, 2005, p.118).

2) Within the framework of the National Agriculture Policy (2000) was the stress on combining the traditional practice inherent in organic agriculture and the possibility of making up gradations in terms of a scientific perspective to it.

3) "The department of Agriculture and Cooperation(DAC), Ministry of Agriculture(2000) constituted a task force on organic farming under the chairmanship of Shri Kunwar Ji Bhai Yadavwhich recommended the promotion of organic farming". (Bhattacharyya P and Chakraborty G, 2005, p.118).

4) The Commerce ministry set up the National Organic Program in the year April 2000. The Agricultural and Processed Food Products Export Development Authority (APEDA) is implementing the National Program for Organic production (NPOP). The NPOP contains documents that specifies certification at the national level, enlists the standards that are set out for accrediting certifying bodies. Accreditation and certifying processes have been made and approved by the National Steering Committee. (Bhattacharyya and Chakraborty, 2005, p.118).

The Government of India under the NPOP program, developed standards that were set out for the export of organically produced products. The Ministry of Agriculture for local (domestic) use has accepted the standards that have been set out. In order to look into and monitor all the activities where organic is concerned that comes under the NPOP "A National Steering Committee comprising Ministry of Commerce, Ministry of Agriculture, APEDA, Spices board, Coffee board, Tea board and various other Government and private organizations" (Bhattacharyya and Chakraborty, 2005, p.118-119) are involved in this.

According to the FAO:

> **Organic Program was developed and implemented by the Government of India through its Ministry of Commerce. The Ministry of Commerce established a National Steering Committee for Organic Production (NSCOP), whose members were drawn from the Ministry of Agriculture, Commodity Boards, Food Processing Industries, Forests and Environment, Science and Technology, Rural Development and Commerce, and Trade and Exports.**

(http://www.fao.org/organicag/display/work/display.asp?country=IND&lang=en&disp=summaries, 2006).

The rules defining organic farming set out for the NPOP were based on the IFOAM (International Federation of Organic Agriculture Movement) basic Standards for Organic Production and Processing (IBS), EU regulations and the Codex Alimentarius (2). (http://www.fao.org/organicag/display/work/display.asp?country=IND&lang=en&disp=summaries, 2006).

The first set of regulations for the export of organically produced food products was set out in June 2001, the rules and regulations being developed and approved by the National Steering Committee, further:

Through the National Program for Organic Production, the NSCOP formulated a National Accreditation Policy and Program and developed standards for organic production and processes as well as the regulations for use of the National Organic Certification Mark. (http://www.fao.org/organicag/display/work/display.asp?country=IND&lang=en&disp=summaries, 2006).

The National Program for Organic production defined organic farming as:

A system of farm design and management to create an ecosystem, which can achieve sustainable productivity without the use of artificial external inputs such as chemical fertilizers and pesticides. (Department of Commerce Ministry of commerce and industry, 2005, p.11).

Organic farming here was perceived as a means of being able to produce food with minimal inputs, that were natural and at the same time sustainable.

According to the Department of Commerce, The National Program for Organic production would include four key points, which are as listed below:

> **Policies for development and certification of organic products, National standards for organic products and processes, Accreditation of programs to be operated by inspection and certification agencies, Certification of organic products. (Department of commerce Ministry of commerce and industry, 2005, p.16).**

Apart from the definition of organic farming, this official document covered general principles on organic farming practices, standards set for certification process, general principles covering the use of organic manure, principles covering pest and disease management control, soil management principles, water conservation techniques, principle covering livestock and animal care, bee keeping, principles covering processing and handling and also accreditation procedures.

Thus, this organic official document covers all aspects that need to be followed by organic producers, processors and exporters in India at a national level. . One of the reasons that could account for this is to ensure good quality and authentic natural food products for the consumers and the other reason could be in order to be able to cater to the organic export market today that seems to be growing all over the world. This signifies that organic farming has been taken one-step ahead from the point of view of possible revenue generation from it

more specifically to satisfy international agreements like EU regulations, which govern one of the many rules and regulations that surround organic farming.

There are other interesting points that can be drawn looking at the official perspective to organic farming:

- ✓ The rules that define organic farming that are taken care by the NPOP were based on the IFOAM (International Federation of Organic Agriculture Movement) basic Standards for Organic Production and Processing (IBS), EU regulations and the Codex Alimentarius (2).(FAO,2006). Hence, the rules and regulations surrounding organic farming in the country did have influences from rules and regulations set out for organic farming in other countries. This could imply that the drive to export food products from India to the west prompted the Indian rules on organic certification. This fits in with EM' s concern of increasing sales in environmentally sensitive products

- ✓ In India, rules and regulations surrounding organic farming came about only in 2000 and after, while on the other hand in UK the EU regulations surrounding organic farming was already out in the early 90's.

- ✓ Thirdly, in the UK after food epidemics like BSE, consumers growing concern for their health and environment were likely factors that triggered off the official recognition of organic farming. In India, organic farming was already being practiced in the county for centuries together, until the onset of green revolution that had drastic implications on the environment and health of people. The government here seemed to take the initiative of bringing about a change in the agricultural system in the county by bringing about

changes in the agricultural policy system by giving organic farming importance in the country.

- ✓ Fourthly as mentioned afore, in the chapter a significant point that can be noted is that when organic farming gained importance nationally, in the National Agriculture Policy (2000) there was an emphasis on the fact that organic farming practices in the country should make use of the indigenous knowledge of organic farming that it possessed. Seeking possible up-gradations in the techniques used in organic farming systems. Here, traditional knowledge of organic farming was stressed on with the likelihood of being able to make improvements in the methods practiced, unlike in the UK where organic farming practices already seemed to be associated with modern technology and latest scientific methods.

4.5 Government attitudes towards organic farming

The reasons for Karnataka having been chosen for the study have already been discussed in Chapter- 1 of the thesis. The Karnataka state policy for organic farming is now going to be discussed. The first organic farming policy was framed in the year 2004 in the state. The official perspective on organic farming has been discussed for the state of Karnataka. The next section discusses the Karnataka agricultural policy for the year 2006 with specific emphasis on protection of the environment/ conservation of natural resources as well as, sees ways in which organic farming has recently received a lot of attention in the state of Karnataka in the year 2008. This would probably give an insight as to how crucial a role organic farming may have had in framing the agricultural policy in Karnataka.

Organic agriculture here has been defined as follows:

> **A way of life in India, a tradition that for centuries has shaped the thought, the outlook, the culture and economic life of its people. (Commiserate of Agriculture, 2004, p.5).**

The document goes on to say that in India, formerly a lot of farmers were not aware of the use of pesticides and fertilizers, in the process of agriculture, it was farming in a natural, holistic way that was being practiced in the country. It was when it was felt that the food grain production in the country should be enhanced that fertilizers and pesticides, hybrid variety of seeds that increased the productivity level appeared, apart from irrigation systems and dams being made use of for agricultural purposes. This though did help enhance the country's self-sufficiency level but at the cost of the environment. Affecting also humans, animals and plant species and thus affecting the biodiversity of the system. The technology that was involved in intensive agriculture did nothing for the natural resources or the environment in different parts of the world. (Commiserate of Agriculture, 2004, p. 5).

Here, one again it can be seen that organic farming in India, even at an official level, is looked upon as connected with tradition and culture of the society. Economic life of people too seems to have been molded by this form of agricultural practice. Thus, organic farming does not seem to be confined to only a traditional practice in India, but it seems to have had a lot of impact in terms of the culture and living of people in the society as a whole.

As per the Karnataka Agricultural policy 2006, a decline in the agricultural growth was noticed apart from which the community of small and marginal farmers seems to have been neglected. The problem of their debts that was an issue and weather being a problem as there

were a series of monsoon failures in Karnataka. Thus, in order to address these various problems and try to enhance the growth of the agricultural sector there was an impending need to have a new perspective towards the rural economy and towards the current state of agriculture in the state. The policy was meant to revolve around the farmers in the state.

> **The philosophy of the agricultural policy lies in the concept of *'Pancha Sutra'* that was announced by the state in its budget 2006-07for accelerated growth in agriculture. (Commiserate of Agriculture, 2006, p.16).**

Out of the five elements of the policy the ones that are relevant with regard to environmental protection and conservation in the state are:

> **To protect and improve soil health, Conservation of natural resources, with special emphasis on water and micro irrigation. (Commiserate of Agriculture, 2006, p.16).**

Aside from the need to protect and improve the soil and save natural resources, the policy also enlists the need for credit and other inputs to be made available to farmers at a timely rate. The process of post harvesting should be done jointly together with the process of production and finally the miles should be reduced in terms of transferring the technology from the "lab to land". **(**Commiserate of Agriculture, 2006, p.16).

The agricultural policy was oriented towards meeting the needs of the farmers and was centralized around them and at the same time was intent on ways of conserving natural resources and protecting the environment.

It would now be significant to discuss the recent developments where organic farming is concerned in the State of Karnataka and see if it has received more importance than in the previous years (2004-2007) and whether there has been any change in the way organic farming has been perceived in the state of Karnataka. According to Mr. Rajendran editor of a leading National newspaper in India, The Hindu (2008):

> **The Government is embarking on a major plan to encourage organic farming in the state. The state will have a full-fledged wing to monitor organic farming. (Rajendran, 2008, p. 9).**

It is anticipated that a budget of 100 crores will be put aside for the organic farming sector in the budget to be announced on the 18th of July2008. Apart from the monetary funds set aside, a scheme to encourage organic farming has also been considered. The Chief Minister of the state Mr. Yeddyurappa encouraged organic farming talking about the ill effects of subsidized fertilizers on the soil and many ways in general. He said, "We have to go back to the old ways of cultivation (Rajendran, 2008, p.9)**.** This outlook on organic farming at the higher level in the government of the state is very significant as it reflects the fact that organic farming is still looked upon as a practice that is ancient and inherent to the tradition of the country.

For the year 2007 in Karnataka the organic farming policy, involved setting aside a budget of 100 crores for the organic farming sector in the budget announced on 18th of July 2008. Apart from the monetary funds set aside, a scheme to encourage organic farming was also considered which involved making organic farming more popular among the farming community in the state. For this, the State government has decided to pay incentives to producers who adopt this environment friendly method of farming.

According to National newspaper Times of India (2008):

> **As part of the scheme, the government will first designate 1,000 villages as organic farm villages. Then it will identify one family in each village that is into organic farming. Such families will get a one-time incentive of Rs. 2,000 to carry on what they are doing. (Times of India, 2008, p. 5).**

Apart from getting incentives, the producers are also expected to teach the organic methods of farming to fellow farmers who are interested in learning. This is an indication as to the increasing importance that organic farming seems to be getting in the state of Karnataka, policy wise though as indicated earlier organic farming seems to be viewed even to this day as a very eminent part of the Indian society and the way of life of its people. Karnataka seems to be propelling organic farming to the forefront in the state and according the Times of India (2008) the there are several objectives to this, the objectives being:

> **Making agriculture self-sufficient and reducing farmer's expenditure, increasing food security by encouraging traditional crops and traditional food habits. (Times of India, 2008, p.3).**

Again here, the term 'traditional' has been highlighted with respect to organic farming and organic food respectively, which is indicative of the fact that the term 'organic farming' and tradition seem to go hand in hand.

4.6 Organic certification bodies

After looking at one kind of perspective on organic farming that is unanimous in stressing on the traditional nature of organic farming that is associated with India, let us look at the other kind of perspective that has an element of modernity attached to it with the way it visualizes

organic farming in India today. In this context, the certification bodies that certify organic farms in India are important, and this is what is going to be discussed.

The following are the 11 accredited certification bodies that come under the National Program for Organic Production (NPOP). They are as follows: (APEDA 2008, 1)

- ✓ Bureau Veritas Certification India Pvt. Ltd. (Formerly known as BVQI (India) Pvt. Ltd.), located in Mumbai (Maharasthra).
- ✓ SGS India Pvt Ltd located in Mumbai(Maharasthra).
- ✓ Uttarakhand State Organic Certification Agency [USOCA] located in Dehradun [Uttarakhand].
- ✓ ECOCERT (Eco control and certification body) India Pvt. Ltd located in Aurangabad [Maharasthra).
- ✓ IMO Control Pvt. Ltd.- Institute for Marketecology Control Private Limited[Karnataka].
- ✓ APOF Organic Certification Agency (AOCA) located in Bangalore [Karnataka].
- ✓ Indian Organic Certification Agency [INDOCERT] located in Cochin [Kerala].
- ✓ Lacon Quality Certification Pvt. Ltd. located in Thiruvalla [Kerala].
- ✓ Natural Organic Certification Association [NOCA] located in Pune [Maharasthra).
- ✓ One Cert Asia Agri Certification Pvt. Ltd. located in Jaipur (Rajasthan).
- ✓ Control Union Certifications (Formerly known as Skal International (India) located in Mumbai (Maharasthra).
- ✓ Rajasthan Organic Certification Agency (ROCA] located in Jaipur (Rajasthan).

We have already discussed the state regulations and policy attitudes. Now let us look at the details of the following certification bodies:

4.6.1 SGS India Pvt. Ltd.

Located in Mumbai (Maharasthra) founded in 1950 Certification provides a variety of testing, inspection and verification services to clients worldwide. It utilizes extremely sophistication means of communication to get across to its worldwide clientele in order to dispense its services through professionals who are multi-disciplined and employed here. (http://www.in.sgs.com/inbrief.htm, 2008).

SGS India Pvt. Ltd. says that it provides services like:

> **Inspection, testing and monitoring activities vis-à-vis all or any part of commercial transaction and operations connected with buying, selling and movement – transportation or shipping of goods.**
>
> **(http://www.in.sgs.com/ activites/certification?lob=10108420, 2008)**

SGS India Pvt. Ltd. has a multidimensional role in that it offers services covering a variety of areas like agriculture, industry, minerals, consumer testing, systems and services certification. (http://www.in.sgs.com/activities/certification, 2008).

It can be thus said that this organization that provides certification services looks at it (provision of inspection and certification services) from a business perspective making it technology savvy, (which includes organic farming too, since this is enlisted as an organic certifying body). Modernity and sophistication too are elements that add to the nature of this certification body taking agriculture to an altogether different level where today it is

associated with modern scientific methods and a business approach. This is a more modern approach to the way certification procedures are today visualized in the country.

Information on organic farming or the way in which organic products are certified is not available.

4.6.2 Eco control and certification body (ECOCERT)

Is a control and certification organisation, whose activities are governed accordingly by the public authorities and legislation". (http://www.ecocert.com/-About-us-.html, n.d). ECOCERT has been accredited by COFRAC which is the French Committee for accreditation for the production of agricultural products organically. (http://www.ecocert.com/-About-us-.html, n.d). ECOCERT certification of organic products complies with the organic production standards for European markets(EC2092/91), organic production standards for Indian markets(NOP-National 0rganic production) standard and organic production standards for Japanese markets JAS (Japanese agricultural standard of organic agricultural products). ECOCERT certifies organic products in several countries according to the National regulations. Hence, it is "accredited in China, India, Turkey, Tunisia and Costa Rica". (http://www.ecocert.com/Local-regulations.html, n.d). Promotion and regulation of international trade as per the details mentioned above about Ecocert are the reasons for it having several offices in many parts of the world in this particular case in India. In India ECOCERT started its operations from June 2002, the main office is located in France. Inspection and certification of organic products is carried out in several states of India like.

ECOCERT (India) says that it is:

> **Keen in the promotion of Indian Organic Logo in the international markets– thereby creating market recognition of quality organic produce from India. (http://www.ecocert.in/about_us.html, n.d).**

The promotion of Indian organic produce in international markets reveals the fact that organic farming in India is now moving towards a more modern outlook by agencies like certification bodies that seem to want to capitalize on international markets by promoting environment friendly produce. The element of Ecological Modernisation is revealed in this aspect.

ECOCERT promotes National and International certification for organic produce. It has developed standards like NPOP and EC 2092/91. Standards have been developed for Organic Textile, Organic cosmetics, Organic aquatic plants and Non-genetically modified organisms. (http://www.ecocert.in/stan.html, n.d). This fact is illustrative of the use of technology and latest scientific methods where organic farming is concerned to produce contemporary consumer products proving that maybe organic farming has attained a more modern appeal to it in India.

ECOCERT is the largest certifying bodies in India and according to data that is presented further on in the chapter it accounts for a major portion of organic certification in the country, in fact the highest altogether accounting for a total of 204473.87 hectares. (Personal through e-mail on August 16th, 2008 from the Director of the National Centre of Organic Farming, Department of Agriculture and Cooperation, Government of India).

4.6.3 Indian Organic Certification Agency (INDOCERT)

INDOCERT was established to provide quality inspection and certification services at affordable rates. (http://www.indocert.org/aboutus.htm, 2008). A certification body operates at a national as well as International level.

The certification standards cover standards of NPOP, EEC) No. 2092/91, USDA-NOP also EN 45011/ ISO 65 accreditation, which are:

> **Issued by DAP, Germany, for certification of agricultural production, collection of wild plants, and processing of organic agricultural and livestock products as per rules equivalent to Reg. (EEC) No. 2092/91. (http://www.indocert.org/, 2008).**

INDOCERT says that:

> **Organic food comes from organic farms utilizing the best of both traditional and modern techniques. (http://www.indocert.org/ agriculture.aspx, 2008).**

Organic farming is said to use a combination of traditional as well as modern techniques as mentioned above in order to protect the soil and increase its nutritional content for the production of food that is sustainable nature thus in the process making using of external inputs in as minimal quantities as possible. The traditional knowledge is pertaining to producing and protecting plants that are grown organically and this is combined with the modern knowledge of using natural inputs in the form of "microbial fertilizers and bio-control (http://www.indocert.org/agriculture.aspx**,** 2008).

Apart from organic food being consumer driven in the country, because of health and nutritional benefits, according to INDOCERT (2008) organic food is very important now with respect to trade as the consumer market for organic foods is increasing all over the world and there also seems to be an emerging market for organic foods domestically too. Organic foods are also associated with premium prices attached to it. In other words, it can be said that organic apart from being a source of good food is also a means of generating capital. This highlights the more indigenous approach to this system of farming, which apart from its traditional appeal today is also associated with a newer sense to it in terms of introduction of newer techniques and a medium of generating economic returns.

In order to stress on the modern approach to organic farming in today's scenario according to INDOCERT:

> **Organic systems rely on a modern and scientific understanding of ecology and soil science, while also integrating traditional agricultural knowledge. (http://www.indocert.org/agriculture.aspx, 2008).**

Here, it can be seen that organic farming systems today are perceived as a unique combination of traditional as well as modern scientific approaches unlike in the discussion earlier on in the chapter where it is perceived as a traditional farming system.

The certification standards cover a number of states in India like Andhra Pradesh, Assam, Rajasthan, Gujarat, Punjab, Haryana, Arunachal Pradesh, Chattisgarh, Uttar Pradesh, New Delhi, Orrisa, Manipur Mizoram, Nagaland, Tripura Tamil Nadu Andhra Pradesh, Karnataka, Kerela according to Inspection and Certification Officer, INDOCERT. (Mail received on 14 Aug 2008).

According to Inspection and Certification officer of INDOCERT the total number of organic farms under the INDOCERT certification is 18335 covering an area of 90490 acres also in terms of the number of farmers certified by INDOCERT it amounts to 18335 inclusive of group farmers. (Personal communication through e-mail on 14 Aug 2008).

4.6.4 LACON Ltd. (**Institute for food quality and certification of organic food)**

It was first approved officially for inspection and certification of organic products in the European Union. LACON Ltd, has its main offices in Germany as well as Austria and, a variety of certifications for "agriculture and food production". (http://www.hoefele-multimedia.de/lacon2/en_start.php, n.d). In addition, they deal with "inspection and certification deal with organic production and International Food Standard (IFS)". (http://www.hoefele-multimedia.de/lacon2/en_start.php, n.d). It has standards that it offers for both National as well as International certification like EEC regulation 2092/91 for the European union, US-NOP standards (National organic program) standards for the United states and National Program for Organic Standards for India apart from which it has developed standards for private organic labels as well. (http://www.hoefele-multimedia.de/lacon2/en_start.php, n.d).

4.6.5 Lacon Quality Certification (India) Pvt. Ltd.

This is a subsidiary of LACON GmbH, Germany, which offers a wide range of certification services for agriculture and food production sectors. (http://www.laconindia.com/home.php, 2007). It is a certifying body that certifies processing of organic food, and other organic related activities like exporting and importing also of organic produce for which national standards and rules and regulations need to be followed apart from which food standards that

are internationally known that is (IFS) is also taken into account where international certification is concerned.

According to LACON India (2008), production of food that is organic in nature is based on a method of farming that does not make use of harmful chemicals and inputs. It defines organic agriculture as:

> **Much more than simply chemical free farming. Producing Organic is a commitment to a system, which ensures that healthy, nutritious food can be produced year after year without environmental degradation. (http://www.laconindia.com/organic-agriculture.php, 2007).**

Organic system here is viewed as a more sustainable, stable method of agriculture that ensures good quality food simultaneously helping protect the environment. In this case too, like for ECOCERT which is a France based certification organization promotion and regulation of international trade are the main reasons for LACON Ltd. to have its subsidiary in India.

4.6.6 Natural Organic Certification Association (NOCA)

This is an organic certifying body that claims to be able to provide reliable "reliable and affordable organic inspection and certification assistance for farmers, processors input manufacturers and organic produce traders". (http://www.nocaindia.com/index.html, n.d). According to NOCA (2008) organic farming is about producing food in a natural chemical free manner where in soil plays a key central role in an organic system and the principle behind organic is to allow Mother Nature to provide us food the way nature intended. (http://www.nocaindia.com/Organic%20Agriculture.html, n.d).

According to NOCA, organic farming is beneficial for reasons, as it is less financially demanding which helps small farmers in the country to be able to practice this form of farming without draining them of their financial resources. Secondly, from the perspective of the environment it is eco friendly helping maintain the fertility of the soil and for the government, which now encourages the practice of this environment friendly form of farming, it could bring down the cost that is going towards subsidizing fertilizers in the country.

From the perspective of opportunities that exist in the trading environment too, farmers have opportunities and access to international markets, which would be beneficiary to them. (http://www.nocaindia.com/Organic_Farming.html,n.d)

Again, here it can be noticed that organic farming is now being looked upon from a modern perspective with regard to trade. This would help generate profits by finding international markets for domestic organic products.

NOCA certifies organic products that target both national and international markets and thus they have two kinds of standards. One set that meets the requirements of the domestic market for instance the National Standards for Organic Products (NSOP) under the National Program for Organic Production (NPOP). The second set of standards that meet the need of an international market like the EU 2092/91 and JAS standards for organic products. Therefore, this explains why it adopts a more ‘traditionalist’ discourse so that it can reach a home market. (http://www.nocaindia.com/Organic_Standards.html, n.d).

According to the senior auditor of NOCA, it certifies organic produce in states like Maharastra, Madhya Pradesh, Karnataka, Uttaranchal and North East and this certifying body accounts for 20% of organic foods certified in these states. (Personal communication through e-mail on 16th Aug 2008).

NOCA furthers defines organic food coming off from environment friendly organic farms that follow a good combination of both traditional and modern techniques. This outlook to the way organic food is produced is similar to the way in which INDOCERT defines the system of organic farming that produces healthy, nutritious organic food.

4.6.7 One Cert Asia Agri Certification Pvt. Ltd

This is a nationally and internationally operating Inspection and Certification Agency that has been accredited by APEDA (Agricultural and Processed Food Products Export Development Authority) to begin its functioning since the year 2005 in India. One Cert Asia is a branch office of One Cert, Inc. USA that has started its certification operations in India to serve Asian countries. (http://www.onecertasia.in/about-us.htm, n.d).

One Cert Asia Agri Certification Pvt. Ltd, The certification covers National and International organic Standards that are required of organic foods that are a part of the world markets like "NOP-USA, EU 2092/91 and JAS standards in USA, Canada, Latin America, Europe and Asia". (http://www.onecertasia.in/, n.d).

According to the data sent by the CEO of this certification agency, One Cert Asia certification is extended to Northern states in India like Madhya Pradesh, Assam, Rajasthan, Gujarat, Punjab, Haryana, Arunachal Pradesh, Chattisgarh and Uttaranchal. North Eastern states like Manipur and Mizoram. Also Southern states like Tamil Nadu and Andhra Pradesh

thus highlighting the fact as to its diversity and large extent of certification. It accounts for about 25-30% of organic certification in the country. (Personal communication through e-mail on 16 Aug 2008).

In addition, the CEO of One Cert Asia talks about what organic farming entails mentioning that, "Organic farming is a consumer driven movement". In addition, there is no single perception to organic farming in fact the perception varies. One Cert Asia also has been said to be one of the four most popular certifying bodies in India as per the CEO. (Personal communication through e-mail on 21 Aug 2008).

It can be noticed at this stage from the description of the certifying bodies like ENDOCERT and Lacon Quality Certification (India) Pvt. Ltd. discussed earlier on that the commonality between these organic certifying bodies is that the main offices are internationally located with their respect subsidiaries in countries like India. Which as mentioned already earlier on is for promoting and regulating International trade of organic products based on fulfilment of international standards that are set our for various countries, thus reaping economic returns and at the same time ensuring a more eco-friendly environment, which is the crux of the theory of EM.

Out of these, the main certifying bodies in the state of Karnataka are as follows:

- ✓ IMO Control Private Limited (IMO India) - Institute for Marketecology
- ✓ APOF – (The Association for Promotion of Organic Farming)

4.6.8 Institute for Marketecology Control Private Limited

The Institute for Marketecology (IMO) is:

> **One of the first and most renowned international agencies for inspection, certification and quality assurance of eco-friendly products. (http://www.imo.ch/imo_about_us_en,1202,998.html, n.d).**

It is accredited by the Swiss Accreditation Service (SAS) for the eco-friendly activities that it performs all over the world and this standard (SAS) is an internationally well-known standard for certification. Like Endocert, IMO has worldwide standards (EC2092/91, NOP, JAS) to cater to various international organic markets. (http://www.imo.ch/ imo_about_us_en,1202,998.html, n.d).

In India IMO was the first certification body that started its activities in 1995 with respect to organic farming certification and certification of organic food products. “IMO is active in more than 60 countries across the globe and is the first Organic Certifier to establish an office in India.” (http://www.imo.ch/in_index_en,4462,3249.html, n.d).

The main intention and objective of IMO is:

> **Providing timely, cost effective and professional services in its area of specialization and operations. (http://www.imo.ch/ in_index_en,4462, 3249.html, n.d).**

IMO is accredited as per the National Program for Organic Production (NPOP) “and is the first Indian organic certification agency to obtain international accreditation under ISO 65 for its activities”. (http://www.imo.ch/in_services_en,4470,3249.html, n.d).

IMO apart from certifying organic food products IMO also looks into:

> **Certification of inputs used in organic farming, wild collection, processing apiculture and aquaculture according to NPOP, Regulation (EEC) 2092/91, NOP, JAS and Private labels like Demeter, Naturland, Bio Suisse, Soil Association etc. (http://www.imo.ch/in_services_en, 4470,3249.html, n.d).**

Therefore, it is clear that IMO is an international certifying body that provides international standards of certification to organic producers in the country. Also apart from regular organic produce in India, it has entered new areas of certification too like apiculture and aquaculture. In order to entertain international standards with respect to organic products IMO has adopted apart from the National organic standards for organic production in the country the EU regulation 2092/91. This indicates that international organic standards have been adopted to enable producers from the country to export their produce to the western world, which in turn reflects on economic returns in terms of export and at the same time not losing track of the need to ensure environment protection and sustainability. This is reflective of the theory of EM, which talks about the possibility of sustainability entwined with economic returns.

4.6.9 The Association for Promotion of Organic Farming (APOF)

APOF is an independent organization that is non-governmental (NGO) and is an independent organization that is Government of India accredited that certifies organic products in the state of Karnataka. "AOCA is registered under Karnataka Societies Registration Act of 1960. The Registration No. is BLU-S977-2005 dated 20-12-2005." (http://www.aoca.in/, 2007).

It is responsible for the certification of farms of several small producers and caters to group certification needs. The certification is a mark of the quality for both domestic and international consumers. DEFRA accredits AOCA and the standards are in accordance with the NPOP standards. AOCA provide certification, which is effective in terms of its price. AOCA takes up apart from certification of organic products from individual farms also certification of small farmer groups known as group certification. (http://www.aoca.in/index-2.html, 2007).

Details of group certification have been discussed earlier on in the chapter. Talking about organic certifying bodies specifically in Karnataka (India) it can be noted here, that there are two categories of certification bodies, one like IMO which is internationally based (In Switzerland) and has its domestic office in India too, thus it caters to standards that meet international export requirements for organic foods apart from meeting the domestic requirements for certification. While on the other hand there are also NGO based certification bodies like AOCA that seem more intent on focusing on the local markets and are more intent on focusing on small and marginal organic producers who cannot possibly afford international certification standards and instead prefer taking up group certification measured for their produce.

I was unable to obtain data from IMO and APOF organic certification agencies as they said that data was unavailable on the percentage of organic produce that they certified in Karnataka. However, data with respect to the total area under certification by these two certifying bodies are available for the state of Karnataka. IMO accounted for certifying 3193.33 hectares in total of organic land area in Karnataka while APOF accounted for a

higher amount of certified organic land that came up to 4195.74 hectares in total. (Personal communication through e-mail on 18 Aug 2008).

Control Union Certifications calls itself a "one-stop-shop for a wide range of certification programs" (http://www.controlunion.com/certification/default.htm, n.d) the certificates that they provide are acceptable in all countries almost.

Control Union (CU) Certifications says that it:

> **Commits itself to conduct its activities impartially and in a professional manner. CU understands the importance of impartiality in carrying out its certification activities, managing of conflicts of interest and ensuring the objectivity of its management system certification activities**". (**http://www.controlunion.com/certification/default.htm, n.d).**

It is a part of the Control Union World Group**.** The Control Union Certifications also like many of the certifying bodies discussed earlier cater to international trade of organic products and thus have international standards like EU standards,(European union standards) NPOP(domestic standards) standards, JAS (Japanese Agricultural standards), standards, Polish EU organic standards, USDA/NOP standards (United States of Agriculture Department standards), etc. (http://www.controlunion.com/certification/default.htm, n.d).

This is again reflective of the fact that International trade of eco-friendly organic products has taken a lot of predominance today in countries like India. This takes organic farming to a different level, which is more sophisticated and modern and has capital gains attached to it,

bringing forth yet again the importance of the theory of EM where organic products are concerned.

4.7 Other Organic Certification Bodies

Organic certifying bodies like Bureau Veritas Certification. This is a UK based certification organization involved in "offering solutions in the key strategic fields of your operations: Quality, Health & Safety, Environment and Social Responsibility". **(**http://certification. bureauveritas.co.uk/homePage_frameset.html, n.d). Details on Bureau Veritas Certification India Pvt. Ltd are not available and information on organic farming or the way in which organic products are certified is not available because of which it has not been discussed in the chapter.

Also, details on Uttarakhand State Organic Certification Agency [USOCA] located in Dehradun [Uttarakhand] and Rajasthan Organic Certification Agency (ROCA] located in Jaipur (Rajasthan) have not been discussed as they are the main certifying bodies in the states of Uttarakhand and Rajasthan, which the thesis is not concentrating on.

4.8 Standards set by the certification bodies

The standards set by the organic certifying bodies in India follow both national and international standards as discussed above. According to the discussion above it can be said that the certification bodies take stringent measures in ensuring that the organic products comply with the various rules and regulations. Whether it is a national standard (NOP) or international standard (EC2092/91, USDA, etc) in order to ensure the production of good quality organic produce, regulate international trade and to aid farmers in gaining access to international markets for their produce. It can be noted that the only certifying body among

the ones discussed previously that is a non-profit NGO is AOCA. [The Association for Promotion of Organic Farming (APOF) organic certification agency] which certifies organic produce for the domestic market solely and catering to the needs of small and marginal farmers in the country.

It would be interesting to get an overall picture of the amount of organic land that the accredited certifying bodies certify in the various states of India inclusive of the state of Karnataka. For this, it is necessary to know the overall organic area certified in Karnataka. The total organic area that is certified in Karnataka is 4117.17 hectares for the year 2005-06 and it increased to 6016.13 hectares in the year 2006-07. (http://dacnet.nic.in/ncof/, n.d). This is further evidence of the fact that organic farming is gaining popularity in Karnataka among the farmers increasingly, and thus organic certification, which is mandatory for the recognition of the authenticity of organic produce, is also increasing.

The following data has been received from the Director of the National Centre of Organic Farming, Department of Agriculture and Cooperation, Government of India. (Personal communication through e-mail on 18 Aug 2008).

Total area state wise under Organic Certification process for 2007-08

State	Uttarkhand OCA	LACON India Pvt.	INDOCERT	Rajasthan OCA	ECOCERT	APOF	NOCA	IMO	SGS	One Cert
Andhra Pradesh	0	1432.83	1984	0.00	1301.78	1181.11	0	4886.66	0	340.35
Arunchal Pradesh	0	0.00	149.2	0.00	0	0	0	0	889.6	0
Assam	0	0.00	454.12	0.00	0	20	0	908.8	963.5	0
Bihar	0	0.00	125	0.00	0	0	0	0	0	0
Chattisgarh	2	0.00	34.4	0.00	0	0	0	101.58	40	0
Delhi	0	0.00	0	0.00	0	0	0	0	0	0
Goa	0	0.00	0	0.00	66	0	0	4999.28	0	0
Gujrat	11.69	0.00	29.04	0.00	0	0	0	109.75	0	487.68
Haryana	615.88	0.00	5.3	0.00	920.6	0	0	0	199.6	0
Himachal Pradesh	179.4	1000.50	0	0.00	0	0	0	49.16	0	9368.7
J & K	0	0.00	0	0.00	32165.1	0	0	0	0	0
Jharkhand	0	0.00	0	0.00	0	0	0	0	0	0
Karnataka	755	0.00	76.8	0.00	0	4195.74	0	3193.33	0	0
Kerala	0	539.35	6198.57	0.00	0	0	0	1077.55	0	0
Manipur	0	0.00	371.51	0.00	0	0	0	0	0	10498.082
Maharashtra	0	1636.84	24467.6	0.00	30627.2	0	45800.66	5011.99	0	7362.42
Madhya Pradesh	2935.4	0.00	21960.4	0.00	82042	14.1	0	322	53.2	4918.26
Mizoram	0	0.00	394.8	0.00	0	0	0	0	6016.6	9710.29
Meghalaya	0	0.00	273.4	0.00	0	0	0	0	0	0
Nagaland	0	0.00	299.5	0.00	0	0	0	46.4	14144.5	0
Orissa	0	0.00	129.8	0.00	40078.4	0	0	5470.78	0	7651.27
Punjab	20	0.00	336.6	0.00	0	0	0	0	535.6	2428
Rajasthan	0	200.00	78.8	452.45	14896.79	0	0	37.86	624.76	7489.93
Sikkim	0	0.00	0	0.00	0	0	0	0	0	0
Tripura	0	0.00	0	0.00	0	0	0	0	0	0
Tamil Nadu	0	492.16	839.01	0.00	0	1620	16	3157.22	0	0
Uttar Pradesh	6085.6	5.00	1811.2	0.00	179	0	0	0	3376.64	6469.55
Uttrakhand	7507.87	0.00	0	0.00	2197	0	0	37.86	607.65	0
West Bengal	0	0.00	0	0.00	0	0	0	5441.96	41.68	0
Other	0	0.00	0	0.00	0	0	0	0	0	0
Total	18112.84	5306.684	60019.05	452.45	204473.87	7030.95	45816.66	34852.18	27493.3	66724.532

Source: Yadav, A.K, National Centre of Organic Farming - Ministry of Agriculture, Government of India, 2008.

With reference to the data presented above it can be said that ECOCERT accounts for the maximum land under organic certification altogether for all the states in India amounting to a total of 204473.87 hectares. In Karnataka, APOF accounts for 4195.74 hectares. IMO accounts for certifying 3193.33 hectares in total.

It would now be useful to comment on the two kinds of trends that can be easily distinguished from all the discussions that have been presented earlier on in the chapter where organic farming is concerned. One is the more traditional outlook that is pre-green revolution and the other could be said to be a more modern outlook to organic farming. When modernity is spoken about in the context of organic farming in India, it would be useful to define modernity in this context.

The theme, if not the concept, of modernity pervades sociology and the work of its founding fathers, Marx, Weber, and Durkheim. (Eyerman, 1992, p.38). Modernity by there terms deferred to new ways and experiences of the world.

Modernity is referred to as:

> **A world constructed anew through the active and conscious intervention of actors and the new sense of self that such active intervention and responsibility entailed. (Eyerman, 1992, p.38).**

Here the active participation of actors and their involvement entailing responsibilities seems to be what the definition of modernity wants to convey.

Brouma talks about Modernity as described by Sociological theorists such as Max Weber who talk about modernity in terms of the development of bureaucracy and rational means of ordering and organising things. This according to him is what the concept of modernity entails. Rationalisation is what relates to doing things in an orderly and more reliable way. (Brouma, 2003, p.6).

Therefore, a possible inference that can be drawn in light of the definitions of modernity that have been provided is that where certification procedures and export of organic food stuffs are concerned there is a modern element to it now, different from the past traditional outlook to organic farming where its definition is concerned.

It can be perceived that modernity in organic farming in India is reflected through the bureaucratic procedure of certification. Traditional organic agriculture in India did not have certification standards to pass, in the sense that "as practiced in large swathes of India would usually implicitly achieve the organic certification standards". (Toke and Raghavan, 2009, p.19). But this cannot be defined as organic since it has not undergone the process of bureaucracy. Modern organic food is distinct as it a mixture of modern technology and the bureaucratic process of certification. These are also some "key essences of Ecological Modernisation". (Toke and Raghavan, 2009, p.20).

4.9 Research and support organizations for organic food and farming

Besides the certification bodies, that have been described there are various research and support organizations active in India in general and Karnataka in particular.

The Indian Competence Centre for Organic Agriculture (ICCOA) in India is an organization that comprises of a number of stakeholders that include “NGO’s, farmer organizations, companies, research institutions, and government agencies”. (Eyehorn, 2004, p.7).

ICCOA is knowledge and learning centre for all aspects of organic agriculture and agribusiness. (http://www.iccoa.org/index.asp, 2006). This organization provides services with respect to organic agriculture by “collecting, generating and disseminating information and knowledge, training individuals and institutions”. (Eyehorn, 2004, p.9). All these activities help in building up knowledge as well as the expertise of people and organizations involved in the organic farming sector.

Apart from this ICCOA is also involved in other organic activities like consultancy services that it provides on organic farming and with respect to this taking up projects thus trying to help promote organic farming in the country, “developing training material for key topics in organic agriculture, developing a directory for organic agriculture sector in India”. (Eyehorn, 2004, p.11). Also with regard to research, ICCOA is involved in carrying out market research and thus aids in providing details about this. This includes research projects related to organic agriculture, carrying out programs to help train its stakeholders, giving information about schemes that the government has to support organic farming and giving details about production of key organic crops in organic manuals are some of the very important activities that ICCOA is involved in. (Eyehorn, 2004, p.11). Here, it can be said that ICCOA is another example of a more modern take on organic farming. That takes organic farming to another level, which involves research activities and modern scientific methods as illustrated in the activities and functions carried out by this organization.

The Eco-Agri Research Foundation in Karnataka is another example to demonstrate a more modern angle to organic farming. According to the Research foundation:

> **The prime objective was to promote the concept of land and cow based economy in harmony with nature and specifically targeted at rural development. (http://www.ecoagri.in, 2005).**

Since 1994 Eco-Agri has been a very good example that encouraged several farmers in the region of south Karnataka to take up more eco- friendly methods of growing food like Organic and Biodynamic agriculture and they have benefited from practicing these alternative forms of agriculture. Apart from this, "it is frequently sited for viability studies by various universities and policy framework for the ministry of agriculture and the state government". (http://www.ecoagri.in/**,** 2005).

This foundation supports socially several organic farmers not only from the state of Karnataka but also from states like Kerala, Tamil Nadu, Madhya Pradesh and Rajasthan. The main motto of this foundation is to protect the interests of marginal and small organic farmers and thus help in rural development and at the same time generating awareness all over the world among consumers about organic food products that have been certified. The Eco-Agri Research Foundation talks of organic farming making use of the best combination of traditional and modern practices. In addition, in order to have long-term benefits for the community of farmers and from the perspective of the environment organic farming is continuously developing and fine-tuning "new sustainable agricultural solutions that will be of long-lasting benefit". (http://www.ecoagri.in**,** 2005, p.2). This reveals a more modern approach an organic farming system.

Now, summing up, the more modern perspective to organic farming can be seen by the initiatives taken in the country and in the state of Karnataka where organic farming today does not only entail ancient age old farming practices but it is associated with several things that show a more progressive side to the approach towards this farming system. This includes farmers being enlightened about organic farming through workshops, seminars, media reports, etc. Research activities and organizations help collect and disseminate information on organic farming. Hence, it can be said that organic farming now also seems to be looked at from another point of view as more scientific and modern in nature. This perspective on organic farming can be said to be in keeping with the theory of EM that talks about combining technology and scientific methods in environmental policy planning. The drive to export food products from India to the west has prompted the Indian rules on organic certification (in 2000). There are thus, two varied outlooks towards the method of organic farming one which is more in keeping with the pre-green revolution perspective which associates only traditional practices with organic farming which is what is one way in which organic farming is still viewed. The other outlook towards organic farming is a combination of both traditional and modern methods of practice, This is a more scientifically upgraded way of defining organic farming. This collaborates with the theory of Ecological Modernisation. Bureaucracy is represented through certification processes that are required to prove the legality of the high quality and environment friendly nature of the organic product. Bureaucracy is what defines modern organic farming in a capitalist market, in India as in the EU, with the purpose of regulating that market. Bureaucracy in turn relates to Ecological Modernisation that applies eco-sensitive modern technology and sets up high standards to cater to the need of the affluent society.

4.10 Conclusion

Organic farming in India is an inherent part of the tradition, culture, society and economy of the country. Before the onset of the green revolution, the farmers in the country practiced the traditional method of organic agriculture for generations together. But with the onset of the green revolution, that was triggered by the nation's need to be self sufficient in its food grain production there was the alleged unscrupulous use of chemicals in the form of pesticides and fertilizers. This was on an extensive scale combined with the use of high yielding varieties of seeds and misuse of water as well as natural resources. Critics of the green revolution have argued that the result was that productivity of food grains over a period plummeted and there were environmental hazards as well affecting the health of the soil. It is alleged that water, plants and humans have suffered because of the indiscriminate use of chemicals on the plants.

Since the establishment of national policy encouraging organic agriculture in 2000, the government of Karnataka began giving organic farming importance. It has taken several initiatives in promoting organic farming in the state. These include converting villages into model organic villages/ sites in the state of Karnataka, earmarking money for the development of organic farming in the state. This involves NGO's to help in promoting and making organic farming more popular among the farming community: paying incentives to motivate farmers to practice organic farming thus promoting and reviving the traditional knowledge of organic farming that was present in the country decades ago.

Certification of organic products in India in this context in the state of Karnataka could be either by large international certifying bodies (IMO) that have international standards to be met for certification and export of organic products. Alternatively, by other bodies like ACOA that is catering to the needs of small and marginal organic producers thus, maybe

concentrating more on the local markets. Group certification is a unique concept in that it can be defined as a way of certifying organic products, which gives small and marginal organic producers the opportunity to certify their organic produce at cheaper, or more nominal rates than what the original certification rate for these organic products are.

On one hand where there are certifying bodies like ACOA that are domestic organic certifiers, which help certify organic produce of small and marginal farmers in the country. Then, there are large collaborations like Bureau Veritas Certification India Pvt. Ltd and SGS India Pvt. Ltd. These cater to a huge clientele worldwide offering their certification services not only in the farming sector but also in the industrial sector and consumer sector thus reflecting their ability to provide a wide range of services using modem technology and scientific methods. This shows that certifying bodies are not restricted to only certification of organic products but also they provide certification services to a variety of sectors.

There are also certifying bodies like ECOCERT and Lacon India that are branches of organic certification bodies based in France (ECOCERT) and Germany (Lacon GmbH) that provide certification services not only for organic food products but are also into certification of organic textiles, cosmetics, aquaculture etc. Regulating and promoting international trade in organic products and at the same time, aiding the trade of environmental friendly products is reflective of the theory of EM here, in addition to the fact that Science and Technology are tools in helping achieve this. It can be said that organic certification today in India has become very sophisticated and business oriented, in other words not at all bound within the rigidities of a traditional system.

Bureaucracy is clearly reflected in terms of the certification systems, rules, and regulations surrounding organic products. This seems to have become a necessity to cater to a larger middle class community and westernized, (green) consumerist, society. This marks a distinct relationship between bureaucracy and Ecological Modernisation which is very evident.

There are two different perspectives of organic farming that have been presented in this chapter of the thesis, one is that of it being a way of life, traditional kind of farming that makes use of natural resources. The key element here is the concept of a kind of farming that is environment friendly and at the same time is an imminent part of the India's agricultural system. This signifies that organic farming in this context is not related to technology and modernity.

Whereas, on the other hand there is another perspective to organic farming that certifying bodies like INDOCERT, Natural Organic certification agency and organizations like Eco Agri Research Foundation and ICCOA have on organic farming which is that organic farming today, is about combining both the old and new methods. It seems to be taking on a more scientific and technology friendly approach in addition to its traditional format, which is what the theory of Ecological Modernisation emphasizes with respect to technology and scientific practices. The latter perspective on organic farming practices is similar to the concept of organic farming in the UK where modernity, latest scientific methods and sustainability along with economic returns are associated with organic farming, which is the foundation of the theory of EM as well as reflective of the bureaucracy that organic products have undergone to make them acceptable.

Concluding, though tradition may have been what organic farming represented in the pre-green revolution time in India, there seems to be increasingly a change in the way it is being perceived. Now it seems to be more on the lines of adopting modern methods in promoting and popularizing organic farming. In this context, it would not be wrong to say that though the theory of EM was visualized from the perspective of its application in environmental policy making in western countries, there is a very good chance that it could be successfully applied even in developing countries like India. Bureaucracy here like in the UK is an immanent part of the organic sector too.

CHAPTER 5
CONCLUSION

This conclusion could do with re-stating the research objectives, namely:

1) To compare and contrast organic farming in India and UK
2) To study the rules and regulations on organic farming in the UK and India (Karnataka) and find out if the definition of organic farming has undergone changes over the years in both countries
3) To find out if Ecological Modernisation is reflected in organic farming practices in India (Karnataka) and UK. The first two objectives enable you to answer the third.

Organic farming is an eco-friendly alternative form to agricultural practices. The way organic farming has been perceived is different in UK and India (Karnataka) which are the two countries that have been considered in this study. To begin with, organic farming was perceived as an environment friendly agricultural practice that apart from aiding and abating the cause to protect the environment was good for the health of the soil as well as animals and humans on account of its chemical free nature. Over the years organic farming has had added meaning to it. It is viewed in the light of modernity. Technology and scientific methods are considered as being synonymous with organic farming. In the beginning organic farming meant to cater to the needs of the local community. However, over a period organic farming became more of a capitalist enterprise that catered to the environmental cause as well as helped generating revenue.

In the UK, organic farming is not representative of a traditional method of agricultural practice but in fact, it is associated with modern techniques, techniques that are upgraded and scientific in nature. Certifying bodies like the Soil Association in the UK apply bureaucratic measures to organic farming through their stringent certification measures. Organic food products have to go through the process of bureaucratisation to ensure the fact that they can be made available in domestic retail stress in the UK. This confirms the evidence on

modernity of organic farming in the UK, being related to bureaucracy, commerce and trade, which was the theory set out in chapter 2 of the thesis.

Organic farming in the UK today is much beyond being pro environment and a healthy way of producing foods. It is now a booming and expanding business with trade going on in organic foods. The bureaucracy of organic foods plays a pivotal role in ensuring their marketability and availability. Bureaucracy draws its vital essences from EM, which was a concept that was conceived from the perspective of environmental policy planning in the western part of the world and it seemingly, has its bearings where organic farming in the UK is concerned. The pressure for EU regulations were required, partly to at least, ensure that trade could take place across the EU. Within the UK, bodies like the Soil Association use their own certification standards and measures to 'brand' their products and so secure market share – bureaucracy as a means of expanding business

Where India is concerned, there are two different perspectives on organic farming. The first reviews organic farming from a traditional pre-green revolution outlook where in organic farming was very much a part of the traditional agricultural system, which has been practiced for decades in India. Traditions seem to have been handed down from one generation to the other over the years, until there was a major change in the agricultural practice system in the country. This caused organic farming to be neglected by the farming community and the government in the country.

Organic farming practices took a backseat in India when there was a food crisis in the country. It was substituted by intensive agricultural practices that made use of extensive use of chemicals, fertilizers, water and other inputs. This marked the onset of the Green Revolution in India, which brought with it many repercussions. The second perspective on organic farming that has been articulated in the thesis is based more on a modern and scientific approach on similar lines to the UK.

The traditional perspective to Indian organic farming is different from the UK in that it is not associated with technology, or modern scientific methods. It is looked at from the point of view of being inbuilt into the roots of the Indian way of life for a very long time and is associated with age-old farming practices. Organic agriculture was the backbone of the economy of the Indian society, which was and still is a predominantly agrarian society. The

cow, which was used as livestock on the organic farms, was a source of important inputs like milk and cow dung. They were worshipped in India. This reveals the fact that organic farming systems were an imminent part of not only the economy of India but also a very important part of the society and culture in the country.

Talking in particular about the state of Karnataka, which is the central focus of the thesis, organic farming policies were introduced in the year 2004, which again was much later than in England. The Government of Karnataka has paid a lot of attention to organic farming in the state off late and has schemes, which are helping encourage organic farming in the state. However, once again the government of the state of Karnataka views organic farming as a traditional based knowledge of agriculture. The traditional nature of organic farming is further highlighted by the fact that the there is a mention of organic inputs in the ancient literatures of India like Arthasashtra, Mahabharata and Ramayana. This also adds to the fact that whether it is culturally or socially organic farming seems to be a very significant part of the country and society in India.

The other point of view on organic farming considers it a unique combination of traditional as well as modern agricultural practices. The modern perspective to organic farming is highlighted by the bureaucratic certification measures that are applied to organic products to ensure their export as well as domestic consumption among affluent groups in India. International trade of organic products in this capitalist world lends itself to the notion that Ecological Modernisation and globalisation seem to go hand in hand. There is a growing upper middle class market in major Indian cities, who want organic products, apart from which the increased opportunities for export to industrialized countries has resulted in the involvement of the Indian Government in promoting common standards and the need to fit in with organic certification practices in countries like the UK.

Research activities and organizations along with knowledge centres are means of collecting and spreading knowledge with information on organic farming. This demonstrates the more progressive methods that are used to make organic farming popular among the producers. Hence, it can be said that organic farming now also seems to be looked at from another point of view, which is more in keeping with modern outlook that considers science and technology as tools in helping protecting the environment. The regulation and promotion of international trade of environment friendly products is reflected here, using modern and

updated techniques, thus emerging in sync with the theory of EM, and changing the outlook on organic farming from being traditional to being more modern and sophisticated. In addition, bureaucracy seems to be very essential in terms of certification procedures to ensure the authenticity as well as trade ability of organic foods. The government of Karnataka and private organic certification bodies has bureaucratised organic foods through their certification standards, to ensure their availability in mass markets, both within the country and outside. Organic foods in India have become more commercialised as well as export oriented and hence, bureaucratic standards like those in the UK are followed.

Moving on now let us summarize the important points of distinction where organic farming is concerned in UK and India (Karnataka):

1) In the UK organic farming emerged as a need to pursue more sustainable agricultural practices in order to protect the environment and for a healthier eco system. Since the objective of having increased food grain supply was achieved in the 1950's, there was a need felt to produce food in a more environment friendly manner by the 1970's. Consumers apart from producers and environmental organizations were involved in promoting organic farming in UK for health reasons. In the UK, the certification processes are in place to ensure acceptance of organic products by affluent consumers in the domestic market.

2) In India, on the other hand organic farming was already a part of the traditional agricultural practice in the country. However unlike in the UK India was not self sufficient in terms of food grain production and organic agriculture was practiced in the country until mid 1950. In the 1960's with the onset of green revolution and increase in food grain production through intensive agricultural practices organic farming took a backseat. Recently due to consumer awareness and government, support organic farming has received a lot of importance in India, specifically in the state of Karnataka that has come out with its own state policy for organic farming.

3) In the UK, organic farming is associated with modernity, which involves using eco friendly technology and modern scientific methods. Bureaucracy is part of what defines modernity, with increasing wealth where the quality of the product is sought after in a capitalist economy. It is different from the Indian situation in that, there is

more scientific methods and capital machinery being used in the UK. Also in the UK, bureaucracy through certification of organic foods is followed more for acceptance within the domestic market, than export purposes/trade which is significant in the Indian context.

4) In India, there are two different perceptions on organic farming. One that favours the traditional outlook to organic farming, here organic farming is perceived as part of the culture, tradition and way of life of the people. The other, which considers organic farming practices to include a blend of traditional as well as modern practices. Here Science and technology play an important part.

5) There is a change in the way organic farming is perceived today, in the sense that it is capitalistic in nature and is a commercial enterprise that helps generate economic returns. This holds true even for developing countries like India. Organic farming in India (Karnataka) is breaking out of its mould. Organic farming, which was considered an important traditional asset of the society and culture in India, is now moving towards a more advanced level by seeking scientific methods in popularizing its environmental friendly practices. Modern organic farming relates to a combination of scientific technology and environmental bureaucracy to ensure the legality of the organic product. To make these products available to the western consumer's certification was very essential. Indian organic products after their bureaucratic transformation into commodities were available to be marketed to environmentally conscious, affluent western consumers. EM was designed from the perspective of analyzing the environmental policy planning process in western industrialized nations; it also could lend its applicability to developing countries like India today. Environmental bureaucratic transformation of organic products is what modern organic farming is about in India today, which has a direct link to wealth generation in the process of capitalism.

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